INDUSTRIAL EQUIPMENT NEWS

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The Original IEN FOUNDED 1933

INDUSTRY'S MOST COMPLETE PRODUCT INFORMATION SERVICE

What's New IN EQUIPMENT, PARTS, MATERIALS

AFFILIATED WITH THOMAS REGISTER OF AMERICAN MANUFACTURERS

Product Information for specifiers and buyers in all industries

BREVITY—Identify by IEN-1101 if you write the maker

HEAT TREATING . . Electronic control tells when to remove work from a quench

Source: W. S. MacDONALD CO.
31-35 University Road, Cambridge 38, Mass.

The change that takes place in steel between the austenite non-magnetic condition at high temperature and the martensite magnetic condition upon being quenched to a given point is employed by this new electronic Quench Controller to signal the correct instant to remove work from a water quench. The instant is predetermined for a desired depth of hardening, for minimized danger of cracking, and to set the instrument for routine operation on any number of duplicate pieces to follow.

The controller consists of a low-frequency power supply, a set of measuring coils and an electronic monitoring circuit. The power supply provides a signal to the coils of variable characteristics to suit given work. The coils, mounted in the quench tank, apply a magnetic field to the work in the tank. The monitoring circuit measures the magnetic coupling and operates the control signals when this coupling has reached the predetermined point for work removal.

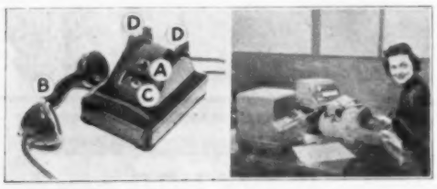
Calibration is by means of a full-size sample inserted into the coil field. This sample has a magnetic section the size of magnetic-metal thickness in the finished part.

Two assemblies are available with quench tanks able to take work to 2 in. in diameter by 8 in. in length and to 24 in. in diameter by 120 in. in length. Available work space in the two cases is 14 by 20 in. and 36 by 132 inches. Power consumption is 100 and 600 watts.

BREVITY—Identify by IEN-1102 if you write the maker

COMMUNICATING . . Telephones connect to central dictation recorder

Source: THOMAS A. EDISON INC.
49-53 Lakeside Ave., West Orange, N. J.



TeleVoice System is a new assembly of one to twenty modified telephones for distribution through a plant and office in a circuit connecting to a central disc-type recording machine known as the company's TeleVoicewriter. The installation is completed with a Disc Secretarial Unit for transcribing, a typewriter and a stenographer. The stenographer changes the plastic discs on the recorder and also the index slips. She writes the dictated material for all of the individuals in the group served by the installation.

The telephone is available in the desk set illustrated and also in an assembly for wall or desk-side suspension. It is modified to mount a signal light A to indicate open or busy line, a "talk" button B that is depressed to start and released to stop the turntable in the recorder, a button C that is depressed when the dictator wants to say "correction". The circuit buttons D make a length mark on the index slip when they are depressed by replacing the telephone or in the course of dictating several separate pieces. A buzzer notifies when the disc record is nearing its end.

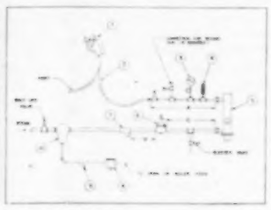
FIGHT CANCER WITH FACTS

Cancer is curable if discovered early and treated properly. There are seven danger signals by which it can be recognized in time. They are described in detail by a booklet available on request. Address the American Cancer Society, 47 Beaver St., New York 4, N. Y. Your contribution will help in the fight against cancer.

BREVITY—Identify by IEN-1103 if you write the maker

PAINTING . . Spray gun employs steam in place of compressed air

Source: AMERICAN BRAKE SHOE CO.
95-99 Humboldt St., Rochester 9, N. Y.



Super-heated steam takes the place of compressed air in a new Model S-100 spray gun that has been developed for production use in metal-product finishing. The steam atomizes the paint and also raises the paint temperature for conservation of solvents. The thin coating that can be spread results in finishing material savings of 10 to 20 per cent in test application of the equipment.

The company supplies the gun. It is prepared also to supply or to advise on associated equipment for connection to a plant source of steam or to a small boiler, such as the unit previously described IEN-4795-50.

The gun shown at 1 in the schematic illustration connects through a steam hose 2, to a supply line mounting one or more outlets, a pressure gage 3, a thermometer 4, a steam super-heater 5, a 1-in. pressure regulator 6, a strainer 7, a trap and strainer-equipped separator indicated at 8, 9 and 10, and a shut-off valve leading to the steam supply. A second hose from the gun leads to a pressure-feed paint tank of a pressure paint-circulating line.

The installation assures dry steam at the gun at temperatures as high as 500 deg. F. The gun itself is designed so the operator can hold it comfortably with bare hands. The assembly includes a finger guard, adjustable fluid needle and a spray head with a one-piece steam cap and fluid nozzle that can be cleaned without difficulty.

BREVITY—Identify by IEN-1104 if you write the maker

DUST COLLECTING . . Louvered cones assemble in multiple to specification

Source: AERODYNE ATLANTIC CORP.
44 Wall St., Room 1603, New York 5, N. Y.

Dust-laden air is cleaned for return to a room or process or valuable dusts are reclaimed from an air stream by installation of a required number and size of the company's new cone-type separator elements in a suitable housing and with provision for removal of the dust as it is collected. The cone is a European development. It is patented and now in production in the United States for general use.

Entrance for dust separation is at the large end of the cone so large dust particles of appreciable mass traveling straight ahead strike the reverse louver surfaces and are deflected toward the center of the air stream. Passage of the air into the cone toward the small end builds pressure that causes the air to turn and move out through the louvers. The fine dust is held in suspension at the point of turning and is carried down for discharge with the heavy particles through the small end opening. This opening connects for each cone in the assembly to a small cyclone collector for final dust disposal.

A characteristic is that contact between dust and metal is minimized to the point where 20-gage sheet steel is adequate for a long period of service. The cones can be made in any dimensions and are available in a standard range between 45 and 150 in. in height by 8 to 24 in. in largest diameter. Corresponding air rating is 1,000 to 13,000 cfm. The cones can be arranged vertically for air movement up or down or will operate equally well in horizontal position. They can be assembled to operate in parallel for desired volume and in series for exacting dust removal from an air stream.

Bulletin, "Aerodyne Dust Collectors", presents 16 pages of information on operating principle, performance, uses.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

WHAT DO YOU NEED?

READER SERVICE FORM . . Look between pages 16 and 17 or 88 and 89 and "lift" the form you find there. Keep it beside you as you look through the pages. Note on it the numbers of the products on which you want further information. Then either mail it to us, so we can forward your requests to the manufacturers, or use it as your guide to write direct.

From A Supervising Engineer

"We appreciate the simple and precise way that equipment and materials are described and illustrated in IEN. We have made a card index where all information is filed. We have gained both in knowledge and information."

Departments

READER SERVICE FORM Pages 16 to 17 and 88 to 89
To assist you in securing the information you want

INDEX Page 102
Products and services listed by names and by functions

DEFENSE PRODUCTION Page 4
Concerning "things to do things with" as we look ahead

NEWS NOTES Page 24
Reviews of unusually helpful literature and services

NEW LITERATURE Page 70
Condensed reviews of current manufacturers' catalogs

"I WISH I HAD" Page 104
Requests we cannot answer, printed in the hope you can

Our selections in this issue

ALLOYS Page 24
Machining instructions for copper and its alloys

CONTROL Page 53
Electronic, for remote control of process variables

DRIVE Page 84
Rubber belt rides without slip on toothed pulleys

GAGE Page 2
Precision classifier for balls, rollers, vanes

HANDLING Page 46
Stacking machine loads cartons or cases on pallets

MOTOR CONTROL Page 81
Prevents stop on 70 per cent momentary voltage drop

PAINTING Page 19
Hard facing material for wood foundry patterns

PHOTOGRAPHING Page 85
Recording camera and equipment for protective uses

POLISHING Page 29
Diamond abrasive belt finishes bore in drawing dies

SEALING Page 5
Tube sheet packing stretches for insertion

TESTING Page 9
Machine checks hardness, stamps good pieces

WEIGHING Page 3
Automatic scale rejects off weight containers

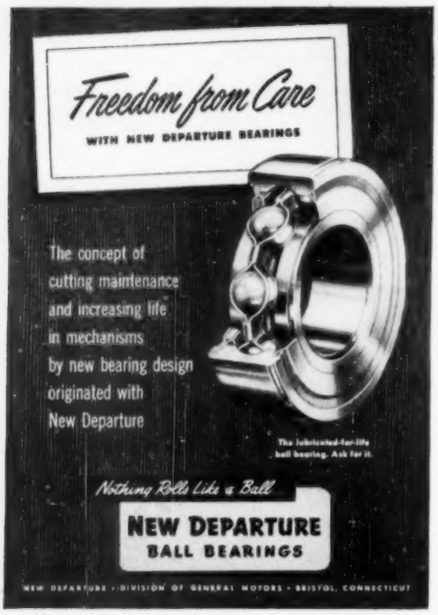
W. E. Lish, V. Pres. & Editor — F. Morr. Smith, V. Pres. in Charge

THOMAS PUBLISHING COMPANY
461 - 8th Ave., New York 1, N.Y.—LOngacre 3-1546

FILL IN AND SEND ALONG TO OTHERS INTERESTED IN PRODUCT INFORMATION

- ☐ Plant Operating Mr. _____
- ☐ Production Mr. _____
- ☐ Engineering Mr. _____
- ☐ Product Design Mr. _____
- ☐ Purchasing Mr. _____
- ☐ _____

BREVITY—Identify by IEN - 1105 If you write the maker



BREVITY—Identify by IEN - 1106 If you write the maker

FREE! 32-PAGE HANDBOOK

SHOWS HOW TO STOP CONDENSATION DRIP

NoDrip

Stops Drip from:
- ✓ Cold water pipes
- ✓ Water filter tanks
- ✓ Metal or concrete ceilings
- ✓ Basement walls
- ✓ Condensers
- ✓ Air Ducts
- ✓ Blower pipes
- ✓ Dust Collectors
- ✓ Crystallizers

Learn how you can control condensation drip from pipes, tanks, ceilings—from metal, wood or masonry surfaces.

LOW COST — EASY TO APPLY

Anyone can apply NoDrip, the triple-duty insulation type coating. Brush it on or spray it on. Use it on pipes or equipment where temperature differences cause condensation. Save money by preventing rust and corrosion. Deaden sound, decrease vibration on metal ducts or pipes.

HANDBOOK SHOWS HOW

Send today for your copy of the NoDrip HANDBOOK which tells what this plastic-cork material can do for you. It's the modern solution to condensation drip problems.

Send for your Free Handbook Now!

J. W. MORTELL CO.

Technical Coatings Since 1895

Dept. IE, Kankakee, Ill.

BREVITY—Identify by IEN - 1107 If you write the maker

NEW! DIFFERENT!

TWO NEW VALVES FOR *Effortless* CONTROL OF AIR CYLINDERS!

TYPE NH (above)—A new hand-operated, four-way, directional air control valve. Sizes ⅛" and ¼". ⅝" lever motion.

TYPE NF (right)—A new foot-operated, four way, directional air control valve. Sizes ⅛" and ¼". With or without pedal guard.

HERE is the newest thing in air valves for operating single or double acting air cylinders! Built for *hand or foot* operation, these instant-acting valves provide fast, effortless control comparable to an electric valve—*at minimum cost.*

DISC TYPE; SELF-LAPPING—Metal-to-metal seat. Air tight. Packless.

PILOT CONTROLLED; PISTON OPERATED—Only light touch required; air does the work—shifts the main valve.

PRECISION ENGINEERED—Simple, compact, self-contained; rugged! Try one today. *Ask for bulletins.*

HANNIFIN *Corporation*

1107 S. KILBOURN AVENUE • CHICAGO 24, ILLINOIS

BREVITY—Identify by IEN - 1108 If you write the maker

GAGE . . Precision classifier for balls, rollers, pins, vanes, parts

Source: PRATT & WHITNEY DIVISION
49 Charter Oak Blvd., West Hartford 1, Conn.

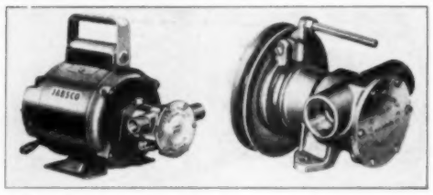
Small parts that must be held to precision measurements and that require classification in a range of acceptable limits are magazine fed to this new Selectronic gage. It is shown in setup to measure and classify carbon vanes used in a refrigerator compressor. It measures the vane thickness which has a tolerance of .0032 in. and classifies the vanes in 32 divisions in increments of .0001 inch.

The vanes feed from the vertical magazine into gaging position under an Electrolimit head. It operates a photoelectric control to register the size of the vane and to pass an electric impulse through a classifier commutator with 32 size segments. This actuates a chute positioner which moves the chute to deliver the measured vane into the proper bin. One set of masters, minimum and maximum, are employed to adjust the gage. Individual increment settings, adjustments or tuning are not required as part of the operation.

BREVITY—Identify by IEN - 1109 If you write the maker

PUMP . . Neoprene impeller rotary, self-priming, motor and clutch drives

Source: JABSCO PUMP CO.
2029-33 N. Lincoln St., Burbank, Calif.



Model 2187, to the left in the illustration, is a new assembly of ¼-hp. 110-volt single-phase ac. motor and shaft mounted ½-in. pump of the company's neoprene-impeller design. The pump has a bronze body, is threaded on inlet and outlet for ½-in. female hose couplings. Operation is at 1,725 rpm. to provide a rating of 10 gpm. against a 10-ft. head. Maximum head is 20 feet.

Model 2300, to the right, assembles one of the company's Model-777 bronze-body 1-in. pumps on a ball-bearing shaft with a built-in clutch and a 5-in. V-belt sheave for A or B belt. Seals prevent moisture from entering the bearings. The operating lever can be replaced and a cable or solenoid used to engage and disengage the drive. This pump is suited for operation at speeds to 3,600 rpm. with maximum rating at 39 gpm. against a 20-ft. head.

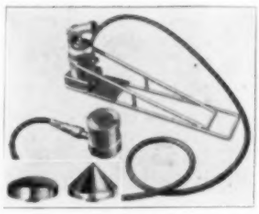
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1110 If you write the maker

A NEWS ADVERTISEMENT BY
THE DUFF-NORTON MANUFACTURING COMPANY

"LO-HITE" JACK . . . Hydraulic Unit for heavy lifting in confined areas

Source: THE DUFF-NORTON MANUFACTURING CO.
Pittsburgh 30, Pa.



For use where confined spaces limit operation of a conventional lifting jack, Duff-Norton has developed the "Lo-Hite" Jack. An independent pump connected to the jack by a length of hose permits jack operation from the ground or any convenient plane.

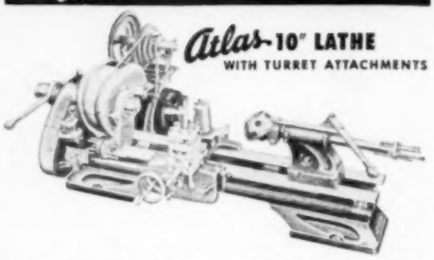
With its closed height of only 4½", this jack will lift a 30-ton load 2". For versatility in jacking operations it is furnished with interchangeable pointed and radius tops, which are heat-treated to assure long service life.

Hydraulic oil in the "Lo-Hite" Jack is contained in a separate chamber independent from the jacking unit. This feature permits operation of the jack in horizontal, vertical, inverted or inclined positions. When not in use the "Lo-Hite" Jack folds into a compact, easy-to-carry unit.

Because this Jack operates efficiently wherever space limitations exist, it has many applications in the construction, marine and general industrial fields. When requesting prices and additional information, specify Model 30-H-4.5.

BREVITY—Identify by IEN - 1111 If you write the maker

LOWEST COST SEMI-AUTOMATIC TURRET LATHE



Atlas-10" LATHE
WITH TURRET ATTACHMENTS

Every feature needed to handle small parts production *quickly* and *economically* is provided by this Atlas 10" lathe with turret attachments. It's the ideal low-cost solution to today's small parts production problems.

Headstock spindle is Timken roller bearing equipped to stand up through round-the-clock production runs. Heaviest back gears of any 10" lathe permits *heavier cuts.* 16 spindle speeds (28 to 1072 RPM) give correct speed for every operation. Complete V-belt drive. Spindle hole takes stock up to 15/16".

See how this rugged, precision-built Atlas can save you money on small part production runs. Send for latest catalog with complete details.

Atlas Press Co.
2801 N. PITCHER ST.
KALAMAZOO, MICHIGAN

MATCHED PRECISION TOOLS FOR WOODWORKING AND METALWORKING

BREVITY—Identify by IEN - 1112 If you write the maker

Smothered

Fire is quickly smothered by a blanket of CO_2 . . . when you pull the trigger of a *Kidde* portable extinguisher. Easy to operate . . . no annual recharge necessary. Write for free literature.

Walter Kidde & Company, Inc.
236 Main St., Belleville 9, N. J.

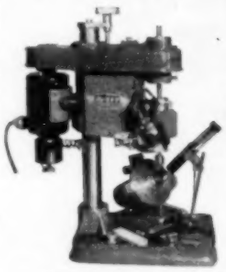
Kidde

BREVITY—Identify by IEN - 1113 If you write the maker

Here in clear, concise form is the step-by-step procedure for joining ferrous and non-ferrous pipe and tubing with the fast, reliable, economical low-temperature silver brazing alloys EASY-FLO and SIL-FOS. It tells how to—cut and fit—clean—flux—support assemblies—heat and flow the alloys—clean after brazing. Write for a copy now. Ask for BULLETIN 17.

HANDY & HARMAN 82 Fulton St. New York 7, N. Y.

BREVITY—Identify by IEN - 1114 if you write the maker



Taylor

HI-EFF

PRECISION DRILLING MACHINES

Always Look For The FACTS THAT COUNT!

• Here are seven significant facts . . . They represent "HI-EFF" quality features for sensitive, precision drilling. Write for Bulletin 761.

1. Spindle and chuck run-out .0001".
2. Vaporized lubrication of bearings.
3. Spindle supported by 4 select, precision bearings—other moving parts precisely ground and lapped.
4. Solid column for maximum rigidity.
5. Variable speed—800 to 40,000 R.P.M.
6. Radial positioning of drill head.
7. Counter-balanced spindle affords sensitive, feather-touch feed.

Dynamometers • Static Balancers • Precision Drilling Machines

TAYLOR DYNAMOMETER & MACHINE CO.
528 N. WEST HIGHLAND AVE. • MILWAUKEE 3, WIS.

BREVITY—Identify by IEN - 1115 if you write the maker

it's **TOUGH!**
it's **dependable**

Securityflex
PORTABLE CORD

Securityflex* keeps equipment running. Takes abuse, resists kinking, flexes indefinitely. Resists oil, water, abrasion, age, ozone.

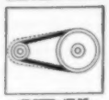
Insist on Securityflex Portable Cord for your equipment. So rugged it's used on mine drills. It's the right cord for your job. Made by Anaconda Wire & Cable Company, 25 Broadway, New York 4, New York.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 1116 if you write the maker

BROWNING
STEEL CABLE GRIPBELTS

MORE *Strength* • LESS *Stretch*



Browning Steel Cable Gripbelts are much stronger than ordinary belts. They will safely carry heavier loads with fewer belts. They will stretch less and give longer life without loss of power and efficiency.

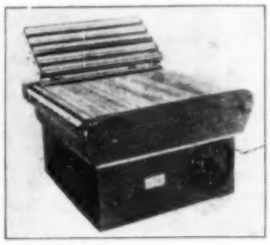
Write FOR LIST PRICE SHEET V-163-A

BROWNING MANUFACTURING CO.
INCORPORATED
MAYSVILLE, KENTUCKY

BREVITY—Identify by IEN - 1117 if you write the maker

WEIGHING . . Automatic scale checks, rejects off-weight containers

Source: THAYER SCALE & ENGINEERING CORP.
399 Webster St., Rockland, Mass.



Filled containers, bags, boxes, cartons, barrels, to 220 lb. maximum, are delivered to this new Model 200 check-weighing scale over a roller conveyor from the back or front. The container comes to rest momentarily on the cadmium-plated steel-slat conveyor that rides the scale platform. The weight actuates the mechanism to read and then to operate to the right or left, depending on whether or not the weight is within predetermined limits.

Underweight and overweight units are delivered in one direction, acceptable units in the other. A horn is sounded each time a container is outside the set limits. Each unit, acceptable or not, actuates an indicator at a remote location, as at a filling machine, and also one on the scale itself. A printing recorder can be specified.

The conveyor is driven by a ¾-hp. 3-phase motor. It operates after each container has been weighed, can be set to work in only one direction, sounding the horn on unacceptable units if the reversing operation is not required. Adjustment is provided to set overweight and underweight allowances independently in tenth-pound steps to 4 lb. in each direction of conveyor travel.

Two sizes measure 35 by 35 by 21 in. and 42 by 18 by 21 inches. Weight is 600 pounds. The housing is made of insulated steel and is dust proof and equipped with a thermostatically controlled electric heater. The scale is unconditionally guaranteed for 500,000 weighings or for six months of service. List price is $2,880.

BREVITY—Identify by IEN - 1118 if you write the maker

VALVE . . Straightway Y type for blowoff duty, 1½ to 2½ in.

Source: EVERLASTING VALVE CO.
47-51 Fisk St., Dept. 15, Jersey City 5, N. J.

Monel seat is threaded into the cast-iron or cast-steel body of this new blowoff valve. The seat is sealed with gaskets top and bottom to protect the body threads. The stainless-steel stem carries an H-Monel head or disc and rides in a bronze nut. Parts are renewable with ordinary tools. Construction conforms to the ASME Boiler Code for pressures to 600 pounds. Each of the three sizes employs working parts that are interchangeable in the company's angle-type blowoff valves.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 1119 if you write the maker

News Advertisement by Rigidized Metals Corporation

FREE MANUAL . . On metal processed for more square feet per pound

Source: RIGIDIZED METALS CORPORATION
664 Ohio St., Buffalo 3, N. Y.

Conservation of metals in short supply, such as nickel, is a feature of Rigidized Metals. Our process of design-strengthening and texturing metal sheet and strip makes it possible for you to secure strength and rigidity for less poundage.

"How" is described in the illustrated pages of this new 12-page manual on the process itself, materials that can be handled, examples of production cost reduction, possible major product improvement.

Illustrations show available designs, typical applications and explain the improvement made in mechanical properties by redistribution of metal in the sheet or strip as a result of the processing.

Particularly we suggest your study of the Idea Chart occupying a page of the manual. In it we have compiled actual product applications for Rigidized Metals along with the product manufacturers' stated reasons.

Just write IEN-11528, into your reader service form with this issue of Industrial Equipment News or note the number in your letter to us. If you write direct and can tell us what you have in mind perhaps we can give you specific data and a sample or two of the processed metal.

BREVITY—Identify by IEN - 1120 if you write the maker

LUBRICATION ECONOMY

"LUBRIPLATE Prevented Parts Replacements and Tie-ups"

After clearing 500 acres of salt marsh for the Leslie Salt Company, J. O. Archibald, contractor of Redwood City, Calif., said *"LUBRIPLATE keeps equipment rolling in mud, muck and water."* You may never have an earth-moving job like this to do, but if you turn a wheel in any industry, you can profit by Mr. Archibald's experience.

1. LUBRIPLATE reduces friction and wear
2. LUBRIPLATE prevents rust and corrosion
3. LUBRIPLATE is economical to use

Write today for case histories of savings made through the use of LUBRIPLATE in your industry.

LUBRIPLATE DIVISION
Fiske Brothers Refining Co.
Newark 5, N. J. Toledo 5, Ohio

The Different LUBRICANT!

DEALERS EVERYWHERE, consult your Classified Telephone Book

BREVITY—Identify by IEN - 1121 if you write the maker

TURNOVER LIKE THIS COSTS YOU MONEY!

Spilled loads, trucking delays, underfoot hazards are costly. There's no substitute for a *real* heavy-duty floor—and that means concrete, *good* concrete.

Rebuild worn-out floors over week-end (no plant tie-up) with 'Incor' 24-Hour Cement—ready to use in 24 hours, saves a week or more. Faster thorough 'Incor'* curing means stronger, longer-lasting floors.

Write for booklet, "Heavy-Duty Floors"—address Lone Star Cement Corporation, 100 Park Avenue, New York 17.

*Reg. U. S. Pat. Off.

LONE STAR CEMENT CORPORATION
Offices: Albany · Bethlehem, Pa. · Birmingham · Boston · Chicago · Dallas Houston · Indianapolis · Jackson, Miss. · Kansas City, Mo. · New Orleans New York · Norfolk · Philadelphia · Roanoke · St. Louis · Washington, D.C.

BREVITY—Identify by IEN - 1122 if you write the maker

NORMA-HOFFMANN *Precision* BEARINGS

A TYPE AND SIZE FOR MOST APPLICATIONS

No matter what your bearing requirement . . . for electric motors, machine tools, business machines, instruments or household appliances . . . Norma-Hoffmann can give you the right bearing for your particular application. These *Norma-Hoffmann precision bearings,* ball or roller, will improve product performance with efficient friction-free operation. Their built-in ability to operate dependably under every load, speed and duty means you get long life with minimum maintenance. 108 distinct series from ⅛" to 21" bore gives you a wide range of choice. Write for catalog.

NORMA-HOFFMANN BEARINGS CORPORATION
Precision Ball, Roller and Thrust Bearings
STAMFORD, CONNECTICUT

BREVITY—Identify by IEN - 1123 if you write the maker

The shape's the thing...

The selection of a suitable steel and its subsequent satisfactory performance can be made easy by good design.

How and in what shape a part is made is, we hold, of fundamentally greater importance than of what it is made.

In designing a piece of machinery it is necessary to consider Design, the choice of steel, and its Heat Treatment. All three are highly significant factors, but of them we believe Design to be vital because even the best in steel and treatment will not save a poorly designed part.

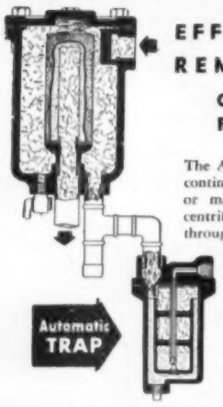
To evaluate the importance of good design and its vital relationship to the selection of steel and its heat treatment, we have prepared a book—"Three Keys to Satisfaction". This starts by discussing mainly design factors involved in stress concentrations, and includes useful sketches comparing poor and good features of design from the aspect of subsequent metallurgy. It is available on request to all engineers and designers.

This booklet sent to you FREE

Climax Molybdenum Company
500 Fifth Avenue · New York City

BREVITY—Identify by IEN - 1124 if you write the maker

Poro-Stone Filtration
FOR COMPRESSED AIR



EFFICIENTLY REMOVES
OIL, WATER
PIPE SCALE

The Adams *Poro-Stone* Filter gives continuous service without attention or maintenance expense. Efficient centrifugal separation *plus* diffusion through Poro-Stone, removes contamination completely without pressure loss. Automatic Trap eliminates attention and assures continuous and efficient filter operation. Write for complete data—Bulletin 176.

R. P. ADAMS CO., INC.
219 E. Park Dr., Buffalo 17, N. Y.

ADAMS *Poro-Stone* AIR FILTER

BREVITY—Identify by IEN - 1125 if you write the maker

Announcing NEW Semi-Automatic
PINES BENDING MACHINE

SAVES TIME, CUTS COSTS ON SHORT RUN, PRODUCTION, AND MAINTENANCE WORK

SPECIFICATIONS
PINES SERIES 1400 BENDER
- Maximum Capacity—1" O.D. 16 ga. steel tube.
- Maximum Radius of Bend—8½" to centerline.
- Length of Tube—Up to 5 ft. standard.
- Bending Speed—99 R.P.M.
- Working Height—35".
- Overall Size (Floor Space)—3' x 7'.
- Pressure—1000 P.S.I.
- Pump Motor—3 H.P.
- Pump—7 G.P.M. (Vickers).
- Optional—Adjustable gages provision for any length of tube, mandrel for critical bends.

Fast, Easy to Operate—Forms Smooth, Neat Bends Quickly

Eliminates many slow, tedious hand bending operations. Is especially designed to cut costs on work formerly considered too variable for fully automatic equipment. Fast and easy for one man to operate. Hydraulic bending arm forms smooth, neat-looking bends quickly. Clamp and die rollers (or sliding dies) are operated by hand toggle levers. Hand wheel provides immediate angle-of-bend selection. *Typical production:* 300 bends per hour on 1"-16 gage steel tube.

Ask for An Analysis of Your Bending Problems

Write today for free literature. Find out how a Pines Bender can be applied to your work. *Ask for an analysis of your bending problems.* There's no obligation.

PINES ENGINEERING CO., Inc.
Specialists in Tube Fabricating Equipment
215 WALNUT AURORA, ILLINOIS

INDUSTRIAL EQUIPMENT NEWS

CCA The Original IEN FOUNDED 1932 CCA

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461 Eighth Avenue, New York 1, N. Y.

What's New · EQUIPMENT · PARTS · MATERIALS

Vol. 19 FEBRUARY, 1951 No. 2

Defense Production

Three aims are listed by the National Production Authority in connection with its administration of the Defense Production Program. These are—

"First . . Production must be maintained and expanded to products needed to build our military strength.

"Second . . Defense requirements of all kinds must be provided with materials and facilities to meet all production schedules promptly. Military contracts must take precedence over all private contracts.

"Third . . So far as possible, the adverse impact of defense production on other industrial production and distribution should be minimized, understanding . . . that we will have much less, or none, of many things we buy today."

All of this says that we are back again to the 1940 days in materials and labor, that now more than ever it becomes important to look to "things to do things with" as the one primary solution.

These "things" can be classified in three divisions. They include your installed facilities, those new things that came out of the last war to set up improved production procedures, and working contact on your part with all available sources to which you can go in the event of a shutdown by any you are doing business with now. We have a suggestion or two for each . .

It is necessary first, of course, that you put your plant on the defense production lists so you will be able to quote a priority number and stand a chance for recognition when you must place materials and equipment orders. Very probably you have done that already or know the procedure. If you have any questions we will be glad to suggest procedure.

You will find that the manufacturers of your plant facilities have not been idle. Line up with them for current information on means to get the most from each installed unit or to replace that unit for a new one better suited to present day requirements. Many things can be done to improve the productivity of old equipment. The makers of that equipment are in best position to tell you what these things may be.

Automatic piece inspection, electronic process controls, work-in-motion gaging, remote-control materials handling, ultrasonic testing, powder-particle drive, industrial television are just a few of the things to do things with that have come out of the last war. Each has been reported in IEN as it has gone into production to make it actually available. Let us know that you want a list and we will mail you one covering selected IEN "head line news" since the last world war.

Sources are in constant flux. Manufacturers to whom you have looked for the things you use are changing to other products. Information on reliable new sources is essential. IEN is probably in better position than most information services to help you in this direction due to its association with Thomas' Register which lists "all makers of all products". Tell us the things you need, name the sources that no longer can produce for you and let us name additional makers of these things to do things with for defense production.

W. E. Irish.

BREVITY—Identify by IEN - 1126 if you write the maker

HIGH EFFICIENCY
DUST CONTROL
with DUCON WASHERS

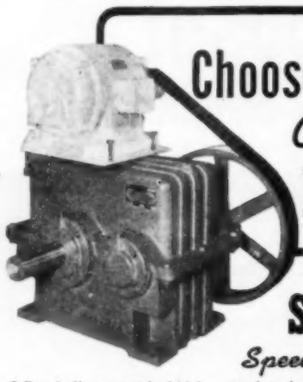
- Afford the most economical and efficient control and wet suppression of dust and fumes because of superior design and unique features.

- In addition to use for washing of air and gases, DUCON Centrifugal-Wash Collectors are ideal for many other applications, such as: gas absorption, condensation of solvents, heat exchange, distillation and chemical reactions.
- Assure collecting efficiency up to 99%. No secondary dust problem. No moving parts, therefore practically no maintenance. Retains constant air capacity. Eliminates fire and explosion hazards. Can be used in high temperatures.
- Construction steel plate, electrically welded. Easy accessibility to all internal parts. Built for simplified installation.

Write for descriptive, illustrated Bulletin CW48-1.

The DUCON Co.
MINEOLA, N. Y.

BREVITY—Identify by IEN - 1127 if you write the maker



Choose Your *Own* RPM's

SACO *Speed Reducers*

● Practically any standard high-speed motor can be used with a *SACO* Reducer to drive machinery and equipment at various speeds. First reduction is through V-belt sheaves. Second reduction is made through steel helical gears. Output speed may be changed by changing only a sheave. *SACO* Reducers are powerfully constructed with a minimum of parts. Motor is mounted on hinged base on top of reducer, cutting down the amount of floor space needed. Write for information.

STEPHENS-ADAMSON MFG. CO.
Televel—Bin Level · SealMaster Ball Bearings · Controls · Car Loaders · Car Pullers · Winches · ChangeMaster Variable Speed Reducers · Saco Speed Reducers
251 RIDGEWAY AVE., AURORA, ILL.

BREVITY—Identify by IEN - 1128 if you write the maker

WHEN YOU . . .
Disconnect, You Stop the Flow in *Both* Ends

Wherever the flow of air, fluids, or gases must be interrupted, Wiggins *INST-O-MATIC* couplings are lowering costs. Uncouple a Wiggins. You've automatically stopped the flow in both ends. Connecting, or disconnecting, is as simple as switching on a light. Wiggins *INST-O-MATIC* couplings can increase efficiency in your plant today, and lower costs.

EQUIPMENT MANUFACTURERS
Users' experiences prove conclusively that this design stands up longer under extreme pressure and vibration, and rarely requires replacement. Inquire today.

BASIC SIZES: ¼", ½", ¾", also intermediate sizes where needed. Unconditionally guaranteed to be leak proof from 0 to maximum recommended pressure.

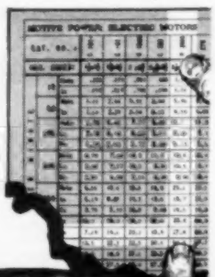
Wiggins

QUICK DISCONNECT
INST-O-MATIC COUPLINGS

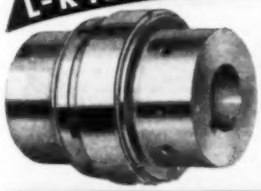
For proof of performance, write for name of nearest representative.
B. B. WIGGINS OIL TOOL CO., INC., 3424 E. Olympic Blvd., Los Angeles 23, Calif.

BREVITY—Identify by IEN - 1129 if you write the maker

A BETTER WAY TO FIGURE AND SELECT FLEXIBLE COUPLINGS... THE LOVEJOY SELECTOR CHARTS TELL YOU EXACTLY WHAT COUPLING YOU SHOULD USE!



LOVEJOY L-R FLEXIBLE COUPLINGS



are easy to install. No lubrication needed. No teardown for changing cushions.

WRITE FOR SELECTOR CHARTS

LOVEJOY FLEXIBLE COUPLING CO.

5014 W. Lake Street Chicago 44, Illinois

Also Mfrs. of Lovejoy Universal Joints and Lovejoy Variable Speed Transmissions

BREVITY—Identify by IEN - 1130 if you write the maker

SEALMASTER BALL BEARING UNITS Serve Best Over the Long Term

SEALMASTER units are designed and manufactured to give maximum service with minimum maintenance time and expense. Permanently sealed and self-aligning, SEALMASTER units give you 1—dependable service 2—operating economy and 3—less maintenance.

WRITE FOR CATALOG 843 FOR FULL DETAILS ON THE SEALMASTER LINE

BEARING DIVISION

STEPHEN S-ADAMSON MFG. CO.

BROADWAY AVENUE, AURORA, ILLINOIS · LOS ANGELES, CALIF. · MILEPTOLE, ONT.

Factory Representatives and Dealers in All Principal Cities

BREVITY—Identify by IEN - 1131 if you write the maker

Adjustable Wrench Nos. 704-720S 4" to 20"

Pipe Wrench Nos. 806-824 6" to 24"

NEW Finishes MORE Quality Features

When you hear users rave about PROTO* adjustable and pipe wrenches—it's no "bull." Special steels and I-beam handles give extra strength. Smooth-operating knurls and thin, light jaws make the adjustables faster than a bullfighter on a bicycle. Full-finish wrenches now have lustrous chrome plating. Buy needed adjustable and pipe wrenches from your PROTO* dealer. Write for catalog to PLOMB TOOL COMPANY 2271Y Santa Fe Ave., Los Angeles 54

PROTO* means PROfessional TOols. It's the new name for the tools that have been preferred for 43 years.

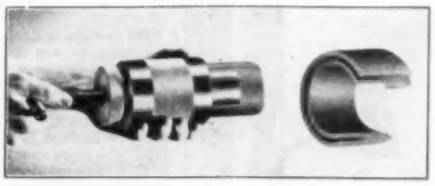
5087

PROTO TOOLS LOS ANGELES

BREVITY—Identify by IEN - 1132 if you write the maker

SEALING . . Tube sheet packing stretches for insertion, then expands

Source: GREENE TWEED & CO.
342 Elm Ave., North Wales, Pa.



Palmetto Tube-Seal trade names new U-shaped packing carrying a metal insert for application in tube sheets to surround and seal the tubes in heat exchangers. It is particularly for use with corrosive liquids. The packing itself is a molded composition, subject to specification for given services. It is elastic in character for insertion with the special tool shown in the illustration.

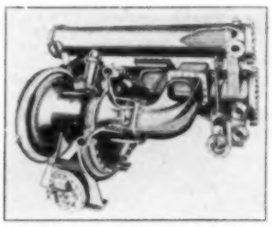
This tool carries a circular blade that fits between the inner and outer packing lips and bears against the insert. It includes gripping rings that are secured on the packing near its rear end so the internal blade can be forced forward while the rear ends are held in order to stretch the elastic material. This results in decrease in external diameter and corresponding increase in internal diameter so the packing, on the tool, can be slipped into position in the tube sheet around a previously-placed tube. The tool is then withdrawn leaving the packing in position. Release of the stretching action results in radial recovery in the packing to grip tightly between the tube sheet, the insert and the tube.

Pressure capacity is to 400 lbs. on the tube side. Neoprene is a typical material. Sizes are to specification.

BREVITY—Identify by IEN - 1133 if you write the maker

REFRIGERATING . . Centrifugal machine chills water for air conditioning use

Source: TRANE CO.
2017 Cameron Ave., La Crosse, Wis.



CenTraVac trade names new hermetically-sealed assembly of two-stage centrifugal compressor, driving motor, capacity control, and horizontal tube-type condenser and evaporator. The two impellers are assembled on the motor which contains the only two bearings in the unit. The bearings are lubricated by filtered and temperature-controlled oil from a positive-displacement pump. Shaft seals are not required.

Five sizes in the present line rate 45 to 55 ton for the smallest, 140 to 190 ton for the largest. Installation can be made, without anchoring, on any floor that will sustain the dead weight. Chilled-water temperature range is 40 to 52 deg. F. Condenser water leaves at 80 to 100 deg. F. The equipment can be started and stopped by pushbutton control or installed with a thermostat to modulate, start and stop automatically, for constant temperature. The refrigerant is Freon F-113.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

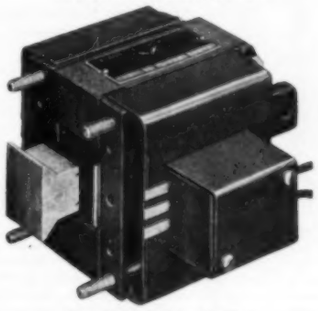
BREVITY—Identify by IEN - 1134 if you write the maker

TROMBETTA SOLENOID CORP.

MILWAUKEE WISCONSIN U.S.A.

FOREMOST SOLENOID MANUFACTURERS IN THE WORLD

CAN FURNISH SOLENOIDS FOR ANY APPLICATION CONCEIVABLE



F-326 PULL TYPE SOLENOID

10 lbs. at 85%; 14 lbs. at 100% voltage and 1½" stroke.

THE F-300 LINE OF SOLENOIDS IS THE RESULT OF 26 YEARS OF CONTINUOUS DEVELOPMENT, IMPROVEMENT AND EXPERIENCE.

BREVITY—Identify by IEN - 1135 if you write the maker

CHROMALOX ELECTRIC RADIANT HEATERS Withstand Shock, Blows, Vibration, Moisture

With CHROMALOX Electric Radiant Heaters you "dial" the exact heat you need to fit the job in drying, baking, preheating, curing, degreasing and similar applications. CHROMALOX Radiant Heaters operate in low and high ambient temperatures, give glareless radiation in efficiently absorbed wave lengths. Easy-to-install without expensive conversion.

CHECK THESE ADVANTAGES
1 VARIABLE heat to suit the job.
2 UNIFORM heat—no hot spots.
3 EQUAL absorption by all colors.
4 ALL-METAL, nothing to shatter.
5 EASY TO FORM low-cost ovens.

THEN SEND FOR DETAILS A free application file shows many practical ways to save time and money with these units.

EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.

See Chromalox Electric Heating Units Advertisement, Page 11

CHROMALOX 1B-6

ELECTRIC HEATING AT ITS BEST!

BREVITY—Identify by IEN - 1136 if you write the maker

INTERCHANGEABLE PUNCHES and DIES

SPECIAL PUNCHES and DIES that are INTERCHANGEABLE

Punches and dies with irregular shapes, for combination piercing and forming, or from special alloys, can be completely interchangeable just as all standard R-B punches and dies. This feature and the use of standardized R-B retainers saves time and money in the design, construction and operation of a die set.

If you need special punches, dies or components, whether or not you desire the R-B interchangeable feature, we make them for you promptly—and to your specifications.

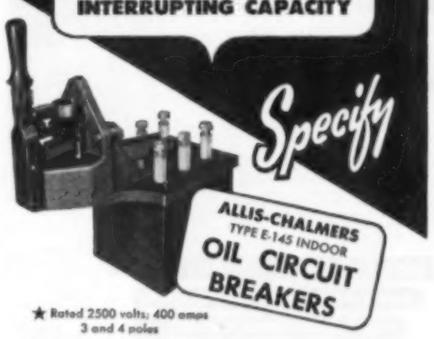
Get the WHOLE STORY in this FREE CATALOG

ALLIED PRODUCTS CORPORATION
RICHARD BROTHERS DIVISION
Department 52 • 12615 Burt Road • Detroit 23, Mich.

Also Produced in Allied's Four Plants . . . HARDENED AND PRECISION GROUND PARTS • STANDARD CAP SCREWS • SPECIAL COLD FORGED PARTS • SHEET METAL DIES • ALLITE DIES CAST OF ZINC ALLOY • JIGS • FIXTURES •

BREVITY—Identify by IEN - 1137 if you write the maker

FOR 15,000 KVA INTERRUPTING CAPACITY



★ Rated 2500 volts, 400 amps 3 and 4 poles

CONTACTS are self-wiping, easily accessible. Arcing contacts of special alloy have high thermal absorption, resist wear. Space requirements are small. Every breaker tested at the factory. Operation: Automatic or manual trip. Specify either manual closing (panel or remote control mounting), or solenoid closing (panel or pipe frame mounting).

For complete facts, send for bulletin B6021.

Other A-C breakers in standard ratings up to 250,000 volts and 5,000,000 kva interrupting capacity.

A-3008

Allis-Chalmers
Milwaukee 1, Wis.

ALLIS-CHALMERS

BREVITY—Identify by IEN - 1138 if you write the maker

METZGAR WHEEL & ROLLER CONVEYORS

BUILT FOR HARD WORK and LONG SERVICE

Complete Wheel Assembly also used as Bearings in Roller Conveyors

100% OPERATING EFFICIENCY BALL BEARING THROUGHOUT

Metzgar construction features wheels and rollers that spin on full 1/4" steel balls (Hoover or equal) in the famous Metzgar Labyrinth Ball Race. Factory-lubricated for life.

Get most for your money in a Metzgar "Maintenance-Proof" Conveyor.

WRITE FOR FOLDER NO. 1251

METZGAR CO.
417 Douglas N. W.
GRAND RAPIDS 4, MICH.

BREVITY—Identify by IEN - 1139 if you write the maker

INCREASE PRODUCTION NOW... WITH Present Plant Manpower / Present Plant Space

Mighty valuable ceiling space can be put to work—without increasing your plant capacities and without increasing plant manpower.

An American MonoRail engineer will show you how you can use your "air rights." With thousands of overhead handling installations from which to draw, each with many money and timesaving advantages, it will pay you to investigate American MonoRail Overhead Handling Systems. Send for bulletin C-1.

THE AMERICAN MONORAIL COMPANY
13111 Athens Avenue • Cleveland 7, Ohio

BREVITY—Identify by IEN - 1140 if you write the maker

POSITIVE TOOL STEEL IDENTIFICATION

WITH THIS NEW 12-Color Chart!

Now . . . to help you eliminate costly tool steel mix-ups, Carpenter Matched Tool & Die Steel bars are painted FULL LENGTH with distinctive colors! This *practical* marking system, along with this new Wall Chart printed in colors that match the completely-painted bars, enables you to . . .

- QUICKLY IDENTIFY TOOL STEELS!
- REDUCE YOUR OWN MARKING COSTS!
- AVOID COSTLY STOCK MIX-UPS!
- SIMPLIFY INVENTORY-TAKING!

Tool Steel Selector and Identification Wall Chart — 21" x 30"—printed in *12 colors!* To cash-in on this new color-marking system, send for your Wall Chart, now. Just mail the coupon.

THE CARPENTER STEEL COMPANY
151 WEST BERN STREET • READING, PA.
Please send me the free Tool Steel Selector and Identification Wall Chart.

NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... ZONE ..... STATE .....
(PLEASE PRINT)

BREVITY—Identify by IEN - 1141 if you write the maker

NAILING . . Magazine feed machine and hand mallet to drive nails, brads

Source: HOLT MFG. CO.
649-53 20th St., Oakland 12, Calif.

The operator of this new machine sets it up for a given size of nail or brad by placing in the feed correct bushings from the assortment supplied. He fills the magazine, locates the machine for start of operations, grasps the machine handle in one hand. He holds the mallet, which also is part of the standard equipment, and strikes the machine plunger one blow each time he locates the driving point for the next nail.

The machine measures 8½ by 17 by 14½ inches. It weighs about 12 pounds. Typical applications include installation of flooring and floor coverings, nailing plywood, wallboard, light sheet metal, manufacture of lattice, wood containers. Adjustments permit setup for flush and for set nailing.

BREVITY—Identify by IEN - 1142 if you write the maker

CIRCUIT BREAKER . . Panel assemblies of Multi-breakers for outdoor use

Source: SQUARE D CO.
6058-62 Rivard St., Detroit 11, Mich.

Also available for indoor use

Raintight housings enclose new panel assemblies of units for 1 to 20 circuits in a line of Multi-breakers for circuit protection. The breakers employ thermal-magnetic operating mechanisms for protection against overload and instant opening on shorts. A breaker cannot be held closed against a short because of its trip-free action. The enclosures are fitted with top conduit hubs and bottom side knockouts. Dead-front construction is standard.

BREVITY—Identify by IEN - 1143 if you write the maker

COUNTING . . Magnetic unit, 1 to 4 digits, has roll back reset

Source: PRODUCTION INSTRUMENT CO.
700-10 W. Jackson Blvd., Chicago 6, Ill.

Mercury Roll-Back reset counter designates new assembly for electrical operation originating from any suitable switch, relay or photoelectric unit. The assembly is available with 1 to 4 digits for operation on 6 to 110-volt dc. or 60-cycle ac. The 3-digit design lists at $8.25.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 1144 if you write the maker

Now VICKERS HYDRAULIC (OIL) ACCUMULATORS

For Industrial Machinery Hydraulic Control Systems

Used where hydraulic power is required intermittently, it stores power during the between-demand periods. Oil (practically incompressible) is pumped into accumulator against a synthetic rubber oil-proof gas-charged bladder . . . compressing the gas and storing hydraulic power that is available as needed. Made in five sizes having net gas-oil capacities from 75 to 2050 cu in; maximum recommended operating pressure is 3000 psi.

Write for Bulletin 50-56

VICKERS Incorporated
Division of The Sperry Corporation
1398 Oakman Blvd. • Detroit 32, Mich.

BREVITY—Identify by IEN - 1145 if you write the maker

Precision ROD CUTTING at High Speed

with the New **DI-ACRO ROD PARTER**

The DI-ACRO Rod Parter further increases the applications of "DIE-LESS DUPLICATING" as a cost-cutting, time-saving production technique so well established by DI-ACRO Precision Benders, Brakes and Shears.

Do you require precision?—DI-ACRO Rod Parter holds tolerance to .001" on duplicated cuts. The ends are square, and roundness is maintained.

Do you want speed?—The Rod Parter exceeds output of other methods with equal accuracy, on rods and bars up to ½". Torrington Roller bearings incorporated in an exclusive multiple leverage arrangement provide remarkable ease of operation.

"PARTS OFF" MANY MATERIALS
All hot and cold rolled rods
Stainless steel
Chrome Molybdenum
Copper Brass
Aluminum Bi-metals
Many types of plastics
Fibre Rubber Wood

GET "DIE-LESS DUPLICATING" CATALOG! Shows parts produced without die expense by DI-ACRO Benders, Brakes, Shears, Rod Parters, Notchers, Punches.

Pronounced "DIE-ACK-RO"

O'NEIL-IRWIN MFG. CO.
318 8th Avenue, LAKE CITY, MINN.

BREVITY—Identify by IEN - 1146 if you write the maker

We will send you a 1¼ lb. can of BESTOLIFE LEAD SEAL PIPE JOINT COMPOUND for $1.00 prepaid anywhere in the United States. Use it on any air, steam, gas or liquid connection in your plant—at any temperature—at any pressure. If it doesn't prove to be the best pipe joint compound you have ever used, we will refund your money. (If your supply dealer stocks Bestolife, pick up a can from him. Bestolife is unconditionally guaranteed, wherever you buy it!)

I. H. GRANCELL
1601 EAST NADEAU STREET
LOS ANGELES 1, CALIFORNIA

BREVITY—Identify by IEN - 1147 if you write the maker

EYE LEVEL CHECK ON BOILER WATER LEVELS

Positive, constant check on boiler water levels is now possible at eye level—right on the instrument panel or other convenient location.

Yarway's Remote Liquid Level Indicator is always accurate because it's operated by the boiler water itself. No stuffing boxes. Indicating mechanism is never under pressure.

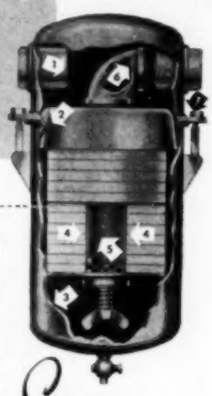
Ideal for indicating boiler water level, feed heater water level, superheater pressure differentials and tank levels. For complete description and operating details, write for Bulletin WG-1821.

YARNALL-WARING COMPANY
122 Mermaid Avenue, Philadelphia 18, Pa.

YARWAY
REMOTE LIQUID LEVEL INDICATOR

BREVITY—Identify by IEN - 1148 if you write the maker

Removes Last Traces of Oil and Moisture from COMPRESSED AIR LINES



THICK FELT DISCS PROVIDE SUPER FILTRATION

Double Action Principle Removes Moisture and Dirt Two Ways—Air is cleaned by both mechanical separation and filtration/absorption. Air enters at (1) strikes Deflector Cup (2) by which heavier droplets and dirt particles are directed to sides (3) and thence downward at high velocity to base. Mechanically cleaned air then passes at low velocity thru Discs (4) which filter the air and absorb last traces of oil and moisture. Clean, dry air passes out thru Bronze Screen (5) and Outlet (6).

Staynew ABSORPTION FILTER

DOLLINGER PROTECTOMOTOR STAYNEW FILTERS

Request Bulletin B-1A. Address Dept. B

DOLLINGER CORPORATION
11 CENTRE PK., ROCHESTER 3, N. Y.

BREVITY—Identify by IEN - 1149 if you write the maker

Ledeen CYLINDERS IMPROVE THE JOB

CYLINDER GIVES FOOL PROOF GATE VALVE OPERATION

By remote control, this 6" diam. x 4" stroke Ledeen Heavy Duty air cylinder opens and closes a 3" diam. refinery gate valve. In the event of power failure, a spring in the tube connected to the cylinder closes valve automatically.

There are Ledeen *medium duty, heavy duty* and *super duty* cylinders for air, oil or water operation ready to help you, wherever you have to . . . push or pull • lift or lower • press or squeeze • tilt or turn • open or close.

Standard Ledeen cylinders and mounting attachments are available from distributors' stock in major cities. Special cylinders on order.

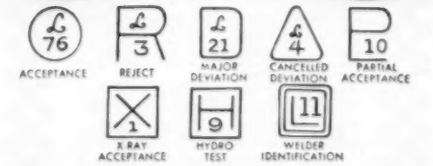
WRITE FOR NEW BULLETIN 500

LEDEEN CYLINDERS ARE GOOD CYLINDERS

Ledeen MANUFACTURING CO.
1602 SAN PEDRO STREET • LOS ANGELES 15, CALIF.

BREVITY—Identify by IEN - 1150 if you write the maker

Simplify Industrial CODE MARKING with "SAFETY" SYMBOL STAMPS



"Safety" code symbol stamps simplify inspection and piece work identification marking. Shown is a complete range of stamps for various inspection code marks. Write today for data on stock or specially designed stamps for your coding requirements.

M. E. CUNNINGHAM CO.
SAFETY STEEL STAMPS
99 East Carson Street • Pittsburgh 19, Pa.

BREVITY—Identify by IEN - 1151 if you write the maker

VALVE . . Safety relief design to protect water heaters and tanks

Source: McDONNELL & MILLER INC.
3502 N. Spaulding Ave., Chicago 18, Ill.

New development of the company's No. 33 relief valve for hot-water boilers, previously described IEN-9263-49, now includes four additional units to open at 45, 75, 100 and 150 lbs. As in the initial 30-lb. unit the inlet measures ¾ in. and the outlet 1 in. based on pipe connection size.

The assembly employs a spring-held needle that lifts just far enough to discharge water at a low rate on reaching the relief pressure. Then, if the pressure continues to rise to a danger point, the valve snaps full open. Each valve is certified for capacity by National Board of Boiler and Pressure Vessel Inspectors, bears the ASME symbol of compliance with the Code.

BREVITY—Identify by IEN - 1152 if you write the maker

SOLDER . . Powdered flux for brass, copper, monel metal, steel

Source: FARRELLOY COMPANY
1249 N. 26th St., Philadelphia 21, Pa.

Lists at $1.50 per pound

AG Flux designates a new flux for use with silver solder. It is supplied in powdered form to be thinned as required with water. The residue can be washed off, using hot water, after a soldering job is completed. Characteristics include a scavenging action, promotion of fluidity of the silver solder, ability to break and disperse the oxide on copper aluminum alloys. Mechanical skill on the part of the operator is minimized.

BREVITY—Identify by IEN - 1153 if you write the maker

FASTENING . . Flush toggle latch for use in access doors in aircraft

Source: MODERN METAL SPINNING & MFG. CO.
2810-14 S. Main St., Los Angeles 7, Calif.

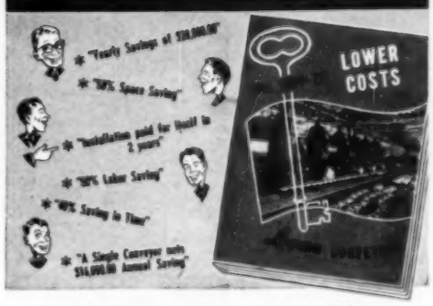
Tite-Seal Series M-1000 is a new stainless-steel toggle type locking door latch which presents a smooth exterior on the door surface in closed position and prevents accidental opening by forces other than those sufficient to break the mechanism. At the same time it is necessary only to press a button on the outside for quick release. Rubber gaskets seal the two openings when the latch is in closed position.

Application is by riveting to the door. The design applies on double thickness of .051 to .091 in. and on doors measuring .040 to .072 inch. Length is 3¼ inch. Weight is 1 ounce.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 39

BREVITY—Identify by IEN - 1154 if you write the maker

HERE'S PROOF!



send for your copy TODAY . . .

•Quotations from actual case histories *prove* that Logan Conveyors mean *real* savings in manufacturing, assembling and shipping operations. The Logan Conveyor book "Key To Lower Costs," contains case studies of manufacturers in many different types of business. Send for your copy now — it will help you in the study of your own handling problems.

Logan Conveyors
LOGAN CO., 200 CABEL ST. • LOUISVILLE 6, KY.

BREVITY—Identify by IEN - 1155 if you write the maker

Dependable . . . "ON-OFF" Controllers For Industry

Speedomax (or Micromax) Strip-Chart Controller
Speedomax Round-Chart On-Off Controller
Micromax Model C
Electromax

The kind of control instrument which industry calls "on-off" or 2-position is not only the oldest form of automatic regulator, but is one which many manufacturers still use, instead of more advanced types, for simple requirements. Usually, the instrument merely closes the valve when temperature reaches the control point, and opens the valve again when temperature falls below point. The question of whether such on-off action is best for the given case can of course be settled by using the instrument with the best, most useful features. Here are some which LEEDS & NORTHRUP offer:

1. Instruments may be Recording Controllers with either strip-chart or round-chart, or Controllers with no charts at all.
2. Instruments can operate at high speed; are not affected by vibration or distance from process.
3. Controls are outstandingly dependable because they "balance" temperature against a standard.
4. Low maintenance assured by machine-like design and construction.
5. More than 1000 standard ranges. Specials are available.

Tell us your problem and we will send further information. Write either to our nearest office or to 4905 Stenton Avenue, Philadelphia 44, Pa.

LEEDS & NORTHRUP

Jrl Ad NM4-53 (Bb)

BREVITY—Identify by IEN - 1156 if you write the maker

machine designers

this informative engineering handbook can help you!

If you design lift trucks, hoists, counterweight suspensions, controls, or any type of equipment where you must transmit pull or lift, this informative, free engineering handbook on tension linkages will help you!

Send for your free copy today. Just fill in and mail the coupon below. There is no obligation.

BALDWIN-REX ROLLER CHAINS

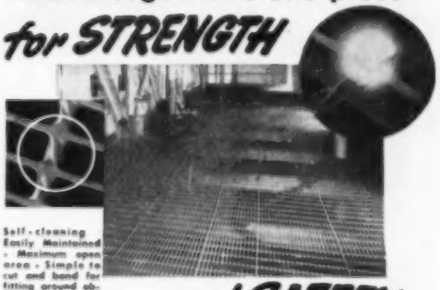
BALDWIN-DUCKWORTH 51-409C
Division of Chain Belt Company
358 Plainfield Street
Springfield 2, Mass.

Send me my copy of your Bulletin on Tension Linkages.

NAME.....
COMPANY..... DEPT.....
ADDRESS.....
CITY..... STATE.....

BREVITY—Identify by IEN - 1157 if you write the maker

Electroforged into one piece *for STRENGTH*



Self-cleaning Easily Maintained • Maximum open area • Simple to cut and bend for fitting around obstacles • Adaptable to many uses.

Blaw-Knox Electroforged Stair Treads available with rolled diamond checker plate nosing, twisted cross-bar nosing or abrasive nosing.

and SAFETY

NON-SLIP — the twist does the trick • Maximum safety and strength . . . that's the ideal combination in Blaw-Knox *electroforged* Steel Grating. Each individual joint is electrically forged together in a union stronger than the surrounding metal! The twisted bar construction gives a firm grip on shoe soles, makes slipping impossible.

WRITE FOR BULLETIN 2206

BLAW-KNOX DIVISION of Blaw-Knox Company
2050 Farmers Bank Bldg., Pittsburgh 22, Pa. — Offices in Principal Cities

BLAW-KNOX ELECTROFORGED STEEL GRATING

BREVITY—Identify by IEN - 1158 If you write the maker

The Really Rugged Bar Iron Truck You've been waiting for!

Heavy duty for bars, tubes and angles.

LANSING COMPANY

TRUCKS · BARROWS · CARTS
TRAILERS · CASTERS · SKIDS

"Keep Your Products on Wheels"

Main Office and Factory: LANSING, MICH.

BREVITY—Identify by IEN - 1159 If you write the maker

THOMAS TRUCK & CASTER CO.

161 MISSISSIPPI RIVER
KEOKUK, IOWA

BREVITY—Identify by IEN - 1160 If you write the maker

HOOKS, TONGS GRIPS and SLINGS

SPEED UP HANDLING SAFELY!

Downs Grabs are designed to do a multitude of lifting jobs faster with a greater margin of safety. Handling steel coils, heavy bags, plate and structural steel, bar stock, drums, etc., is always easier with Downs Grabs. Learn about savings . . . Write for free Bulletin No. 200B.

DOWNS CRANE & HOIST CO.

MECHANICAL ENGINEERS — 540 W. VERNON AVENUE, LOS ANGELES 37, CALIF.

Electric Cranes ● Hand Cranes ● Jib Cranes ● Sheaves ● Sheave Blocks
Plate Grips ● Plate Hooks ● Crane Trolley Hoists ● Crane Wheels ● Crane End Truck Units ● Jib Crane Fittings ● Automatic Mechanical Load Brake Crane Hook Blocks

BREVITY—Identify by IEN - 1161 If you write the maker

GAGE . . Dial type unit to measure sheet and plating thicknesses

Source: FEDERAL PRODUCTS CORP.
1140 Eddy St., Providence 1, R. I.

Improved design and return of its previously developed Model-644 thickness gage to its regular catalog line is announced by the company. The gage is intended primarily for use in stock rooms to check incoming and outgoing sheet metal stock. It applies also in plating inspection departments to read plating thickness. Its dial is graduated in thousandths and can be supplied for continuous reading from 0-100 or for balance to read from 0-50-0. Maximum throat depth is 3 inches. Overall length is about 10 in., and weight is 2 pounds.

Spring-backed anvils measuring ¾ in. in diameter are located in the upper and lower head contact pins in their centers. The upper anvil and its measuring contact are raised for entry of the work by squeezing the hand grip. With the stock in place the grip is released so the upper spring-loaded anvil can press it down, retracting the lower anvil until the stock rests on the lower contact part. The two flat anvils then hold the gage perpendicular to the work surface to take a reading on the indicator dial.

BREVITY—Identify by IEN - 1162 If you write the maker

MAGNIFYING . . Ten power hand unit, ¾ in. in diameter, 1 in. focal length

Source: BUHL OPTICAL CO.
1007-11 Beech Ave., Dept. TI-2, Pittsburgh 12, Pa.

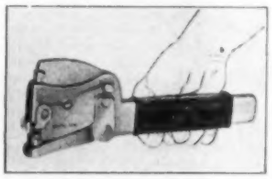
Three parts in lens assembly

Model S-171 is a new magnifying glass in which a ¾-in. 10X lens is mounted in an anodized aluminum frame fitted with a removable handle. Overall length is 3½ inches. The lens is made of first-quality optical glass. Chromatic and spherical aberrations are corrected to provide sharp clear vision over the field of view.

BREVITY—Identify by IEN - 1163 If you write the maker

STAPLING . . Hammer type tool drives staple with ¼ to ½ in. legs

Source: BOSTITCH INC.
959 Mechanic St., Westerly, R. I.



Model H2B is a recently improved design in the company's line of hammer-type tackers. It holds 100 staples in its housing magazine, drives one each time the hammer is struck against a surface. The tool takes staples with ¼ or ⅜-in. legs and in a Model H2B1/2 it takes ½-in. legs. The tool is plated for rust resistance, drives staples into hard wood or through light sheet steel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 1164 If you write the maker

Ramps Tilt to Meet Truck Body. *Standard Wayne Platform Lift*

Cut Costs WITH WAYNE LOADING DOCK LIFTS

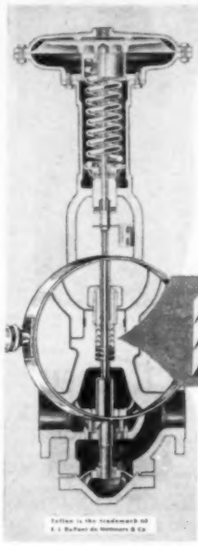
YOU CAN save time and money with Wayne Hydraulic Leveling Ramps to adjust the level of the loading dock to the truck height. Material on skids can be directly transported into the truck body over a level path. A variance of as much as 20 inches in the height of truck bodies may be instantly adjusted by merely turning a valve. Users say: "Cuts Loading time in half." . . . "As good as doubling dock facilities." Send for illustrated folder now.

THE WAYNE PUMP COMPANY
531 Tecumseh Street, Fort Wayne 4, Indiana

NATIONWIDE SERVICE for your protection

BREVITY—Identify by IEN - 1165 If you write the maker

IT'S *New* AND A *Natural*



FISHER *Teflon* V-RING PACKING

Fisher Teflon V-ring Packing has been adopted as standard available construction for all Fisher diaphragm motor valves. Teflon is tough, resilient, and chemically inert. Its smooth soap-like surface makes it ideal packing for control valves. After more than two years of laboratory and field testing Teflon in various forms and shapes, Fisher engineers decided upon the V-ring construction as ideal for packing.

Fisher Teflon packing cut in section to show V-ring construction.

Advantages of Fisher Teflon V-ring packing:

- Economical
- Minimum leakage
- Low maintenance
- Reduction of packing friction
- No corrosion
- No product contamination

Teflon is the trademark of E. I. DuPont de Nemours & Co.

FISHER GOVERNOR CO.
MARSHALLTOWN, IOWA

BREVITY—Identify by IEN - 1166 If you write the maker

Join Sheet Steel

WITH THE "HELIARC" (Trade-Mark) SPOT WELDING TORCH

Needs no forging pressure
Works from one side only
Welds Stainless, Low Alloy, and Carbon Steel Sheet

Torch spot welding, the new inert gas-shielded process, makes possible easy assembly of sheet metal parts from one side without forging pressure. Sheets of stainless steel, low-alloy or carbon steel, 21 to 16 ga. thick, can be joined to each other or to plates of any thickness.

The HELIARC HW-8 spot welding torch has an operating radius of 25 feet. To make a weld, press the "muzzle" against the work, and pull the "trigger". The rest is automatic. This ideal production line tool is as portable and handy as an oxy-acetylene blowpipe. For more information call any LINDE office.

LINDE AIR PRODUCTS
A Division of Union Carbide and Carbon Corporation
30 East 42nd St., New York 17, N. Y. UCC Offices in Other Principal Cities
In Canada: DOMINION OXYGEN COMPANY, LIMITED, Toronto

The terms "Linde" and "Heliarc" are registered trade-marks of Union Carbide and Carbon Corporation.

BREVITY—Identify by IEN - 1167 If you write the maker

NEW IMPREGNATED FELT GASKETING MATERIAL

PREVENTS CORROSION AND ELECTROLYSIS

SEALS AGAINST DUST, WIND & WATER

CHROME LOCK consists of a high-grade felt, impregnated with a specially formulated blend of permanently thermoplastic resins, plasticizers, inert pigments and chromates. Prevents corrosion on original installations — stops corrosion when applied to rusty joints. Chrome Lock also inhibits *electrolytic action* between dissimilar metals.

CHROME LOCK has outstanding anti-aging qualities and will not deteriorate. Tests prove Chrome Lock far outlasts rubber. Chrome Lock is the ideal seal wherever anti-corrosion, anti-electrolysis and anti-aging properties are required! Read these added features:

- ★ **EASY TO APPLY:** Pressure-sensitive adhesive back.
- ★ **ANTI-WICKING:** Non-soluble in water or saline solutions. Prevents seepage under normal pressure applications.
- ★ **LIGHTER FLANGING MATERIALS:** Low pressure compressibility reduces required bolt torque pressures.
- ★ **MANY TYPES:** (Type S) standard Material. (Type N) Flame Resistant. Conforms to Buships Spec. 33FR. (Type OR) Oil Resistant. Used wherever S.A.E. 10-60 oils are present.
- ★ **MANY SIZES:** Thicknesses of 1/64", 1/32", 1/16", 1/8" and ¼". Widths from ¼" to 66".
- ★ **CUT GASKETS:** Made to your specifications.
- ★ **NATIONWIDE SERVICE:** Sales engineers in all principal cities.

Write on your company letterhead for new, 6 page Engineering Folder No. SP-1051

Manufactured by Products Research Company

SPRING PACKING CORPORATION
332 S. MICHIGAN AVE. • CHICAGO 4, ILLINOIS

▼ BREVITY—Identify by IEN - 1168 If you write the maker ▼

SAVES UP TO 50% ON FASTENINGS IN LIGHT GAUGE SHEET METAL

The Original P-K Sheet Metal Screw

SKIPS
Tapping—Forms Own Threads

AVOIDS
Bolting
Riveting
Soldering

SAVES
Time and Trouble in Millions of Assemblies.

P-K TYPE A Hardened SELF-TAPPING SCREW

One of many types of Parker-Kalon Self-tapping Screws for faster, stronger metal and plastic assemblies. For details, write Parker-Kalon, 200 Varick St., New York 14, N. Y.

Call in a P-K Assembly Engineer
See why industry's fastening-wise leaders say—
IF IT'S P-K® — IT'S O.K. — THE ORIGINAL
PARKER-KALON® SELF-TAPPING SCREWS

AVAILABLE EVERYWHERE THROUGH ACCREDITED DISTRIBUTORS

▼ BREVITY—Identify by IEN - 1169 If you write the maker ▼

INDUSTRIAL SPEED-UP demands these POWER-DRIVEN PRODUCTION AIDS

Now, more than ever, speed in production is the order of the day . . . That's why these popular D.P.S. power-driven machines prove a greater-than-ever contribution to present-day industrial needs.

POWER SCREWDRIVER (Model A)

Detroit Power Screwdrivers are hopper-fed and furnished in three models to drive from No. 2 to ½" cap screws. Will drive all types of screws, as fast as one a second . . . All driven to uniform tension . . . Will not strip threads or mar heads. Great time and labor-saving machines that boost production assembling and bring labor costs down.

NUT DRIVER

A revolutionary new machine that drives nuts with amazing speed, either semi-automatically, or it can be adapted to full automatic operation entirely eliminating the manual handling of nuts. Capacity: nuts, ¾" min. to 1⅛" max. across flats.

HOPPER UNIT

Motorized—Highly Adaptable—A selective feeding device whereby production parts are selected, oriented and fed in a given position for primary and secondary operations.

SEND SAMPLE ASSEMBLY FOR PRODUCTION ESTIMATE

MAIL COUPON FOR CATALOG

DETROIT POWER SCREWDRIVER CO.
2815 WEST FORT ST., DETROIT 16, MICHIGAN

Send your catalog and further details.

COMPANY NAME _____
BY _____
STREET ADDRESS _____
CITY _____ STATE _____

DETROIT POWER SCREWDRIVER CO.

▼ BREVITY—Identify by IEN - 1171 If you write the maker ▼

TESTING . . Motor driven machine checks hardness, stamps good pieces

Source: TOPFLIGHT TOOL CO.
114-18 E. Market St., Dept. 1 E 7, York, Pa.

Model B is a recently improved design of the company's motor-driven certifying hardness tester for application in a production line and operation at about 50 tests per minute. It is suited for hardness test and certification of satisfactory work pieces made of non-ferrous metal, or of plastic, in a range between 33 and 155 Brinell or equivalent. The indicating dial carries 100 graduations. Conversion is by a chart supplied. Throat is maximum at 6 inches.

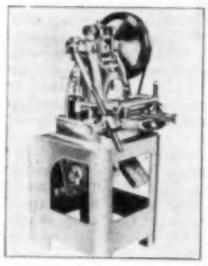
The machine is set up for a given material thickness to a maximum of $\frac{7}{16}$ in. and for a minimum required hardness. The work pieces are then fed under the indenter point of the Barcol impressor employed as the testing unit. This unit is moved up and down through a ⅞-in. maximum stroke at about 50 times per minute. If the work piece is harder than the set minimum, it actuates an electrically-powered plunger carrying an inspection stamp and the work is marked as satisfactory. At the same time a counter in the machine base adds one to its total of satisfactory pieces. If the work is too soft the stamp will not be operated and the counter remains idle.

Marking can be omitted and a green light substituted by operating a switch. Marking without checking for hardness can be handled by moving the tester arm out of position and by adding a tool holder and dies. The work is then fed under the dies and back pressure on contact actuates the certifying stamp and counter on a production basis.

▼ BREVITY—Identify by IEN - 1172 If you write the maker ▼

PRESS . . Roll feed 5 ton machine for 175 to 475 strokes per minute

Source: DI MACHINE CORPORATION
2703 W. Irving Park Road, Chicago 18, Ill.

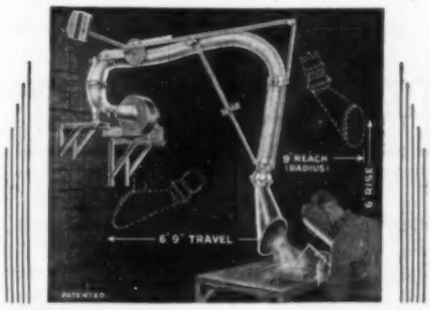


New assembly of press and roll feed takes die sets to 4 in. in width by 8 in. in length by 5¼ in. in shut height. It is standard with ¾-in. stroke or 1 in. to specification. The feed takes strip stock to 4½ in. in width and provides for stock advance in desired amount to 5½-in. increments. The feed rollers measure 3 in. in diameter. They can be hardened and ground or rubber coated for special work.

The press mounts a bed measuring 10 by 7 inches. It has a 3 by 4-in. center opening. The ram is 4 in. in diameter and operates in an adjustable bronze bearing. A Formsprag over-running clutch operates the feed with connection to the crankshaft. Drive is by a ½-hp. motor operating on 220/440-volt 60-cycle ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 1173 If you write the maker ▼



RUEMELIN Fume Collector

Removes Welding Fumes at the Source . . .

Why continue to let your employees inhale welding fumes? You can solve the problem quickly and efficiently by installing a Ruemelin Fume Collector. It produces a powerful suction that draws out noxious gases, smoke and heat at the source. Guards employee health, resulting in less welder fatigue, therefore, greater plant output. Clears shop air with minimum loss of building heat. Covers maximum welding area vertically, horizontally and by circle swing. Shipped assembled, easy to install. 9 ft. and 15 ft. sizes (radius of swing).

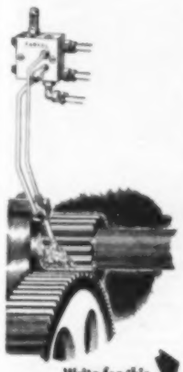
Free engineering service for your fume collector installation. Write for New Bulletin 37-D.

RUEMELIN MFG. CO.
386' N. PALMER STREET MILWAUKEE 12, WIS., U. S. A.
MANUFACTURERS AND ENGINEERS — SAND BLAST AND DUST COLLECTING EQUIPMENT — WELDING FUME COLLECTORS

▼ BREVITY—Identify by IEN - 1174 If you write the maker ▼

New Farval Spray Valve

METERS LUBRICANTS TO SLIDE SURFACES AND OPEN GEARING



Write for this FREE bulletin

BY an ingenious adaptation of the familiar Farval Dualine Valve, either grease or oil is sprayed through a nozzle—onto any desired area, in any amount, at any interval.

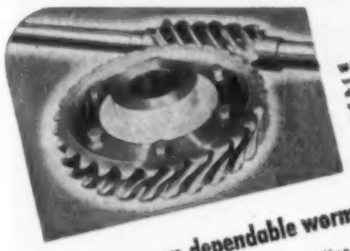
The new Farval Spray Valve can be added to a regular Farval Dualine Lubrication System wherever compressed air is available—or a complete system of spray valves may be installed, served by either manual or automatic pumping unit.

Farval Spray Valves have been thoroughly tested in service on a wide variety of machines and equipment, supplying lubricant efficiently, economically and safely to open gearing, slide surfaces and other areas where Farval closed systems are not readily adaptable.

For full description with diagrams, get Farval Bulletin No. 60. The Farval Corporation, 5258 East 80th Street, Cleveland 4, Ohio.

FARVAL
CENTRALIZED SYSTEMS OF LUBRICATION

▼ BREVITY—Identify by IEN - 1175 If you write the maker ▼



Whether you want standard drives or special units, Cleveland can serve you.

Prompt service on dependable worm gearing

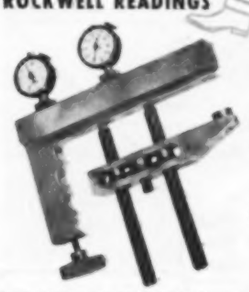
CLEVELAND offers a complete line of worm-gear sets and speed reducers, including the popular fan-cooled Speed-aire, to meet the needs of any machinery or equipment builder or user. Representatives in all major industrial centers are at your service. Write for the latest Cleveland catalog, indicating your requirements. Your inquiry will receive prompt attention. The Cleveland Worm & Gear Company, 3258 East 80th Street, Cleveland 4, Ohio.

CLEVELAND Worm Gear Drives

▼ BREVITY—Identify by IEN - 1176 If you write the maker ▼

Portable HARDNESS TESTER

DIRECT DIAL ROCKWELL READINGS



- FOR "ON THE SPOT" TESTING of bar stock • sheet stock • tubing • gears • crankshafts • cylinder blocks • and other hard-to-get-at pieces.
- ACCURATE, EASY TO USE
- TESTS BOTH INSIDE AND OUTSIDE SURFACES of specimens up to 5" in diameter or thickness.
- COMES IN COMPACT CARRYING CASE with three test blocks, flat anvil, "V" anvil, convex anvil, diamond and ball indenters.

WRITE FOR ILLUSTRATED BULLETIN AND PRICES

RIEHLE TESTING MACHINES
Division of AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois
"ONE TEST IS WORTH A THOUSAND EXPERT OPINIONS"

BREVITY—Identify by IEN - 1177 if you write the maker

V-25 Vibrator on hopper supplying bucket elevator assures steady, even flow of material to the latter.

SYNTRON

"Pulsating Magnet"

ELECTRIC VIBRATORS

With Variable Control of Power

3600 controllable vibrations per minute keep even the most stubborn materials flowing freely thru bins, hoppers, chutes and screens . . . of any size . . . WITHOUT THE HAMMERING AND RODDING AND POKING THAT WASTES MANPOWER AND DAMAGES EQUIPMENT.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 1178 if you write the maker

"Play Safe"—stop your cranes with Wagner Crane Bridge Brakes

Wagner Hydraulic Brakes provide even the heaviest cranes with controlled deceleration and smooth, precise stops . . . as accurate and easy as braking an automobile . . . and just as safe.

If your cranes are not equipped with Wagner Brakes, we can show you how simple it is to install a modern hydraulic system. If you now have old-style Wagner Brakes, your system can be quickly modernized with our complete conversion kits. Bulletin IU-40 gives complete information—write for your copy.

Only Wagner Hydraulic Crane Bridge Brakes give you all these features:

- Two Types—Four Sizes—Cover the Field
- New Remote Control Bleeder
- New Self-Centering Device
- New Systems easy to install
- Old Systems easily modernized

Wagner Electric Corporation 1891 1951

6414 PLYMOUTH AVENUE
ST. LOUIS 14, MO.

ELECTRICAL EQUIPMENT AND AUTOMOTIVE BRAKE PRODUCTS

BREVITY—Identify by IEN - 1179 if you write the maker

BIN-LEVEL CONTROLS

2 BIN-DICATORS
Often Replace 1 Man

BIN-FLO
Aerating Units Keep Finely-Ground Materials Moving

ECONOMICAL MATERIAL CONTROL

DEPENDABLE BIN-LEVEL INDICATION

Mail this Coupon

THE BIN-DICATOR CO., 13946 Kercheval, Detroit 15, Mich.

Please send new 20-page catalog giving complete information and specifications on BIN-DICATORS. Also please send information on BIN-FLO Aerating Units.

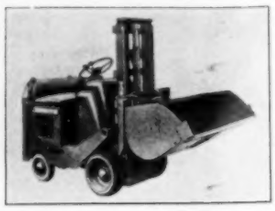
Name_____
Address_____
City_____ Zone____ State_____

N-2

BREVITY—Identify by IEN - 1180 if you write the maker

TRUCK . . Scoop shovel attachment for power lift truck, hydraulic control

Source: TOWMOTOR CORP.
1224-28 E. 152nd St., Cleveland 10, Ohio



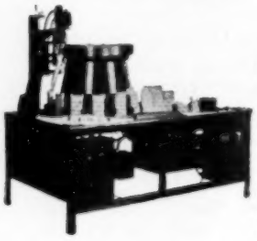
Hydraulic Scoop is new hydraulically-operated attachment for the company's line of fork-lift trucks except its No. LT-90. It consists of a steel-plate bucket in pivoted assembly on a steel plate that mounts on the truck lift mechanism in place of the forks. Between the plate and the bucket is a hydraulic cylinder with which the bucket is positioned for digging, carrying and dumping. Maximum pivoting range is between 30 deg to the rear for carrying and 45 deg. to the front to dump.

To pick up a load of bulk material, the truck is driven forward with the bucket in bottom-horizontal position to force it into a pile. It is tilted upward as forward movement is continued until it is full. Then it is raised on the truck uprights for carrying to a point of delivery. It is tilted forward to dump. Six bucket sizes range from 8 to 15 cubic feet. Overall width is about 40 to 74 inches. Bucket weight is 500 to 715 lb. in the range of sizes.

BREVITY—Identify by IEN - 1181 if you write the maker

PACKAGING . . Automatic machine counts small parts into containers

Source: INTER-LAKES ENGINEERING CO.
4843-47 Bellevue, Detroit 7, Mich.



Vibrating feeder, similar to the unit previously described IEN-9855-48, is the central operating mechanism in this new Count-O-Pack machine. The hopper forming the central part of the feeder takes work such as small washers, nuts, pins. It moves them into single file on an upward trending spiral path inside the circular housing. It passes them along this path through an electronic counting station to a trough leading down to a container positioned below on an indexing mechanism. The counter stops the action on any preset total to a maximum of 999 pieces.

Counter, index action, parts supply in the hopper-feeder, presence of a container in filling position are all interlocked so the machine cannot operate in error and so the operator's activities are limited to keeping the hopper filled and a supply of containers in position. He also closes the containers as they come from the filling position.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

FIND WHAT YOU WANT?
See our suggestions at the top of the Index, page 102

BREVITY—Identify by IEN - 1182 if you write the maker

Buck AJUST-TRU CHUCKS

HANDLES MORE JOBS THAN ANY OTHER CHUCK!

THIS IS HOW IT WORKS
Pinion "A" moves jaws in or out to grip work like any scroll chuck. 4 opposed screws "B" (only 2 shown) bring work to dead center. It's as easy as it sounds. Inexperienced man can center work within .0005 in 3 minutes! Once set dead true, you can machine hundreds of duplicate parts without changing adjustment!

1. .0005 precision with scroll chuck rechucking speed.
2. Handle collet and step-collet work.
3. End most stub arbor, mandrel needs.
4. Adapt to dividing heads, grinders, screw machines, lathes.
5. Minimum overhang—grips work closer to spindle for greater accuracy.

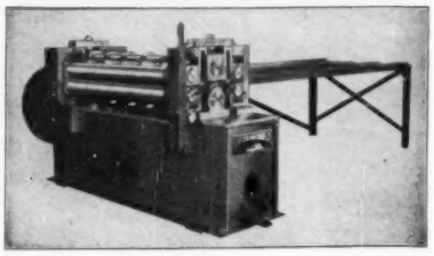
THIS is the most amazing chuck advance in 50 years! One Buck chuck—*at ordinary scroll chuck cost*—will handle the work of special equipment worth $250 or more! Take collet work for example. Buck chucks have spindle capacity *by .001* from 1/8" to 1 1/2". 6" chucks have step collet capacity—*by .001*—from 1/8" to 5". That's *part* of the story. Send for all of it.

BUCK TOOL CO.
216 SCHIPPERS LANE
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 1183 if you write the maker

RAFTER GANG SLITTER

For Lasting Accuracy



With or without feed rolls for the slitting of varied widths and gauges of metal. Machined and accurately ground cutter shafts made of high-grade carbon steel. Machine cut gears. Generous size bearings. Vertical adjustment of upper spindles allows regrinding of double edge type cutters. By removing two bolts, the end housing is drawn from cutter shafts permitting quick change of cutters. Spacer collars machined and marked for particular job, easily and simply removed for change over of various slitting widths. All features represent accuracy, speed and economy.

RAFTER MACHINE COMPANY, INC.
SINCE 1917
249 Stephens Street Belleville 9, N. J.
COLD ROLL FORMING MACHINES
& PRESS BRAKE FORMING DIES

BREVITY—Identify by IEN - 1184 if you write the maker

CMH REX-FLEX

corrugated stainless steel flexible metal hose

For conducting searching and corrosive liquids and gases.

For absorption of extreme cycles of vibration, flexation and variplane motions.

REX-FLEX offers all the outstanding characteristics of stainless steel in a variety of hose types. Light in weight . . . high in strength . . . leak-proof . . . highly resistant to corrosion . . . extremely flexible. It is easy to install and may be bent in multiple planes by hand. It is a "natural" for all flexible stainless steel hose and tubing installations.

Write today for complete information on REX-FLEX stainless Steel Flexible Hose—ask for specifications and data sheets.

CHICAGO METAL HOSE CORPORATION
MAYWOOD, ILLINOIS
Plants at Maywood, Elgin and Rock Falls, Illinois

BREVITY—Identify by IEN - 1185 if you write the maker

Found!

A FLOOR THAT TAKES THE POUND...POUND...POUND!

PABCO MASTIPAVE

AMERICA'S NO. 1 LOW-COST LONG-LIFE FLOOR COVERING

"After years of using Pabco Mastipave throughout our large production plant on cement and wood floors, we have found it to be a most practical floor covering for heavy duty usage," says Bruce E. Merritt, Purchasing Agent, Charles R. Hadley Company, printers and publishers.

"We have greatly decreased accident hazards by placing Mastipave on stairways. Mastipave withstands heavy trucking, and is easy to maintain."

TILE

SEND NOW FOR THE FULL STORY OF MASTIPAVE!

PABCO PRODUCTS INC.
New York 16 • Chicago 54 • San Francisco 19
(Mail to Dept. E, nearest office)

GENTLEMEN: Without cost or obligation to me, please send folder, "Every Building Needs Pabco Mastipave."

NAME_____
ADDRESS_____
CITY_____ STATE_____

BREVITY—Identify by IEN - 1186 if you write the maker

"ball lok"

V-Belt Clutch

NO WEARING PARTS
NO ADJUSTMENTS
SMOOTH PICKUP
HIGH SPEED

LEFT: *Ball thrust type. This is a new clutch.*

BELOW: *Single belt model, with 1-piece fork.*

"BALL-LOK" V-Belt Clutches are simple, compact, light-weight, sturdy and safe. Low cost. High speed installation. Smooth control of power. No wearing parts to replace. May be used as driving or driven elements. Idle at high speeds. Start heavy loads without grab. Save wear and tear on belts. Unique both in design and control characteristics, "Ball-Lok" Clutches fill a gap in the general clutch field.

"BALL-LOK" CLUTCHES SOLD COAST TO COAST, NOW STANDARD ITEMS IN POWER TRANSMISSION FIELD. LITERATURE AVAILABLE.

Write for your copy of the illustrated "V-Belt Roundup"

V-BELT CLUTCH CO. 418 N. WESTERN AVE.
Los Angeles 4, California

BREVITY—Identify by IEN - 1187 if you write the maker

If You Need Accurate Heat—CHECK

CHROMALOX Electric HEATING UNITS

• FAST! • EASILY CONTROLLED!
• ECONOMICAL! • ALWAYS ON THE JOB!

CHROMALOX Heaters give you unfluctuating, trouble-free electric heat that will increase efficiency and cut costs in your production lines or processes requiring heat. Compact CHROMALOX Heaters are quickly installed in air ducts, tanks, ovens, dies, molds and other equipment. They are especially useful where exact temperature control and dependable service are critical. Check this reliable heat source now!

Ask for Catalog 50

It lists over 10,000 types, sizes and ratings of electric heaters especially designed for industrial applications. Write today.

EDWIN L. WIEGAND CO., 7505 THOMAS BLVD., PITTSBURGH 8, PA.
See Chromalox Electric Radiant Heaters Advertisement, Page 5

CHROMALOX
ELECTRIC HEAT FOR MODERN INDUSTRY

BREVITY—Identify by IEN - 1188 if you write the maker

HIGH EFFICIENCY

RIGHT ANGLE DRIVES

PHILADELPHIA
SPIRAL-BEVEL-HELICAL
SPEED REDUCERS

Dependable . . . for transmitting power at right angles, either horizontally or vertically. Single, double and triple reductions with standard ratios from 1.5 to 1 up to 238 to 1. Single reduction type employs only spiral bevel gears. Helical gears used on second and third reductions of double and triple types. Single reduction unit for example is 98% efficient,—so often smaller frame size motors can be used than with other comparable types.

Bulletin 200 gives complete details . . . write on your business letterhead

PHILADELPHIA GEAR WORKS, Inc.
ERIE AVENUE AND C STREET • PHILADELPHIA 34, PA.
NEW YORK • PITTSBURGH • CHICAGO • HOUSTON
In Canada: William and J. G. Greey Limited, Toronto

BREVITY—Identify by IEN - 1189 if you write the maker

WELDING . . Gas shielded arc torch and wire feed, particularly for aluminum

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

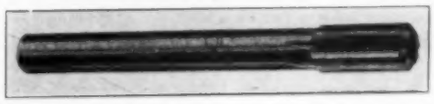
New assembly of the company's FSH-4 argon metal-arc hand-welding torch and the FS1-2 rod-feed unit is available for welding aluminum in thicknesses from ⅛ to 1½ in. in butt, lap, fillet, edge and corner-joint design in overhead, vertical, horizontal and flat positions. The consumable electrode serves as the filler metal, is fed from a coil into the argon-protected atmosphere at a steady pre-determined rate.

In addition to its use on aluminum, the equipment can be applied on copper alloys, stainless steel and similar metals in thicknesses from $\frac{1}{16}$ to ¾ in. in single-pass action or in multiple-pass welding to any thickness. Electronic control governs the rate of feed between 80 and 380 in. per minute.

BREVITY—Identify by IEN - 1190 if you write the maker

REAMING . . Carbide tipped reamer, expansion design, ⅜ to 1½ inches

Source: WENDT-SONIS CO.
Collier & Tenth Sts., Hannibal, Mo.

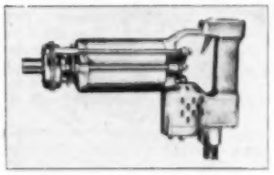


Carbide tips are diamond lapped in this new line of expansion reamers. Rust-resistant shanks are available in straight or tapered design. Adjustment is by positioning a plug accessible at the front end.

BREVITY—Identify by IEN - 1191 if you write the maker

ROCK DRILLING . . Electric hammer also rotates bit in concrete, stone

Source: SYNTRON CO.
410 Lexington Ave., Homer City, Pa.



Model 10-RO is a new 11¾-lb. assembly in the company's electromagnetic hammer line. It operates at 3,600 blows per min., also rotates the drill bit by its rubber-ratchet mechanism which is actuated on each recoil movement. The tool can be handled in one hand.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1192 if you write the maker

SAFETY EQUIPMENT FOR ALL INDUSTRIES

IPCO PORCELAIN ENAMEL SIGNS

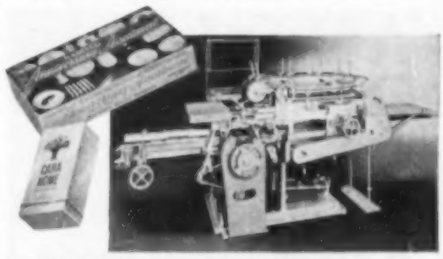
Attractive • Permanent • Economical

A complete line of Signs for every industrial need. Stock wordings for warnings, safe practice reminders and general plant notices . . . SPECIAL SIGNS TO ORDER.

Write for Bulletin F-21

IPCO *Safety Equipment for all Industries*
INDUSTRIAL PRODUCTS COMPANY
2801 N. FOURTH STREET • PHILADELPHIA 33, PA.

BREVITY—Identify by IEN - 1193 if you write the maker



WIDE SIZE RANGE— HIGH SPEED WRAPPING

with the Model FA

Manufacturers often wrap from 6 to 12 different sizes on a single FA machine proving how versatile it is. Speeds of up to 100 packages a minute are possible with only one operator. And the FA is easily adapted to virtually any type of wrapping material. So superior in performance, it is now the most widely used machine in the nation.

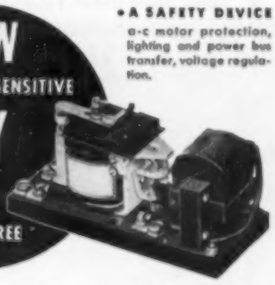
Write for literature

PACKAGE MACHINERY COMPANY
SPRINGFIELD MASSACHUSETTS
NEW YORK CHICAGO BOSTON CLEVELAND ATLANTA DALLAS
DENVER LOS ANGELES SAN FRANCISCO

BREVITY—Identify by IEN - 1194 if you write the maker

NEW A-C VOLTAGE-SENSITIVE RELAY IS POWER-TYPE, CHATTER-FREE

• A SAFETY DEVICE
a-c motor protection, lighting and power bus transfer, voltage regulation.



Bulletin 401 describes Ward Leonard's new a-c magnetic relay in which voltage differential between pick-up and drop-out can be set at 10%—without chattering—5% on special order.

A small saturable reactor, connected in series with the relay coil, acts as a variable impedance, varying with voltage drop. Since it is the major impedance in the circuit, wide current variations through the coil can be obtained with small line voltage variations.

Being a power-type relay, it provides good contact, good make-and-break. Write for Bulletin 401. WARD LEONARD ELECTRIC CO., 33 South Street, Mount Vernon, N.Y. Offices in principal cities of U. S. and Canada.

WARD LEONARD ELECTRIC CO.
Result-Engineered Controls
RESISTORS • RHEOSTATS • RELAYS • CONTROL DEVICES

BREVITY—Identify by IEN - 1195 if you write the maker

3 REASONS WHY CHAMPION Lamps ARE YOUR BEST BUY

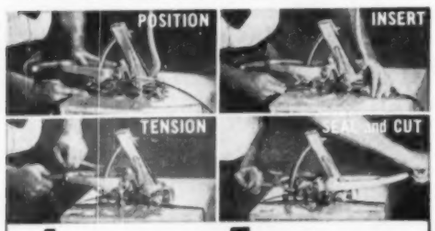
1 Champion Lamps, both fluorescent and incandescent, are carefully made to the highest quality standards, equal to or exceeding Government specifications.

2 Champion Lamps — produced by craftsmen who specialize in making quality lamps and nothing else — are manufactured by a financially responsible Company, over 50 years old, with an AAA1 rating. Champions are known and accepted everywhere.

3 There are many ways in which Champion's engineering service can help you attain better lighting at less cost. Here's one example: Considerable money can be saved by replacing Fluorescent Lamps in groups instead of one-at-a-time. Champion's G. R. (Group Replacement) PLAN does the trick — cuts as much as 60% off labor time, labor costs alone. Detailed engineering bulletins explaining G. R. in detail are available without cost. Simply ask your supplier — or write direct to Champion.

CHAMPION LAMP WORKS
Boston, Massachusetts

BREVITY—Identify by IEN - 1196 If you write the maker



4 STEPS... 5 SECONDS

with the Improved

STANLEY ACE STRAPPING TOOL

● Puts strapping on a production basis! Even a beginner can make time with it. Magazine holds 100 seals—is easily loaded and seals in any position. The "Ace" comes in three sizes to handle ¾", ½" and ⅝" strapping. Put this production tool to work for you. Write for information or ask for demonstration. The Stanley Works, Steel Strapping Division, 143 Lake St., New Britain, Conn.

STEEL STRAPPING AND CAR BANDING SYSTEMS

STANLEY HARDWARE • TOOLS • ELECTRIC TOOLS
Reg. U.S. Pat. Off. STEEL STRAPPING • STEEL

BREVITY—Identify by IEN - 1197 If you write the maker

CUT COSTS... FASTEN "ON THE DOUBLE"

with the

Chicago "214" DOUBLE RIVET SETTER

The "214" automatically feeds, inserts and clinches two rivets at a time...with speed that may mean a big saving in your fastening costs.

14" throat makes large assemblies easy to handle. For tubular rivets as large as 5/32", or less in length. Quick Change Rotary Type Hoppers and Raceways permit a 5-minute changeover to rivets of different size. Adjustable anvils and riveting centers add to its versatility.

Ask us how the "214" can help you cut costs. Send a sample of your problem assembly (or blueprint) for a Free fastening analysis.

FREE CATALOG

contains valuable engineering information and rivet specifications plus illustrated descriptions of 26 Chicago Automatic Rivet Setters.

***Chicago Rivet* & MACHINE CO.**
9602 West Jackson Boulevard, Bellwood (Chicago Suburb) Illinois
Branch Factory: Tyrone, Pa.

BREVITY—Identify by IEN - 1198 If you write the maker

No Floor Damage!

WHEN YOU MOUNT YOUR MACHINES ON

UNISORB®

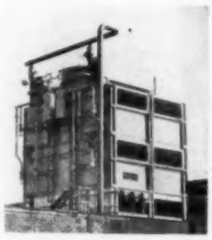
UNISORB - Mounting requires no bolts... no lag screws . . . no old-fashioned, destructive floor drilling. A special cement (we supply it) binds the UNISORB pads to machine feet and floor with a holding strength of 1500 p. s. f. *minimum!* What's more, UNISORB absorbs from 60% to 85% of transmitted machine vibration and noise . . . saves floors, buildings, machinery . . . often permits higher machine speed. Today, write for your free copy of "Why It Pays To Anchor Your Machines with UNISORB."

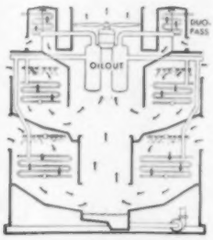
The FELTERS Company
210-I SOUTH STREET
BOSTON 11, MASS.

BREVITY—Identify by IEN - 1199 If you write the maker

REFRIGERATING . . Condenser for large refrigerating plants, 300 ton

Source: NIAGARA BLOWER CO.
3117 Chrysler Bldg., New York 17, N. Y.





Refrigerant gas is connected at precooling coils at the top of this new equipment for initial removal of superheat, reduction of the gas temperature to near its condensing point and condensation of entrained oil vapor for removal in the Oilout separator drums which are next in line. The clean cooled gas then moves into the condensing coils from where it flows for reuse. The complete Aeropass assembly measures 14 by 13 by 18 feet. It weighs 20 ton in sections maximum at 4 ton individually.

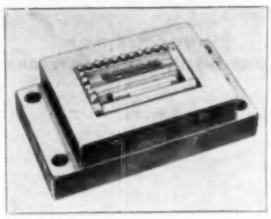
A propeller fan driven by a vertical motor is located in the center at the top of the assembly to draw in air through screened ports that are proportioned to distribute the flow over the precooling and condensing coils. Exhaust air, containing a proportion of hot dry air from the precooling coils, is lowered in humidity sufficiently so fog will not be formed.

Water is circulated between a return tank in the base and spray heads above the condensing coils to provide the evaporative effect in connection with the flow of air that will remove 1,000 btu. for each pound evaporated. Tendency to precipitate solids on the coils is eliminated by initial removal of gas superheat in low evaporating temperatures.

BREVITY—Identify by IEN - 1200 If you write the maker

MARKING . . Steel chase and type for nameplates and flat work pieces

Source: M. E. CUNNINGHAM CO.
99 E. Carson St., Pittsburgh 19, Pa.



Model TC is a new tool-steel chase designed to mount in a press, and apply with steel type and a flat-face punch plate to mark nameplates and work pieces with flat faces. The chase is available in six sizes with type setup space measuring 1 by 2 in. to 3 by 5 inches. Each size takes type in the company's standard of .918 in. in height.

Type measuring 3/32 to ½ in. can be specified in condensed, medium and extended widths. Spacers are supplied in various widths. The assembly locks by turning set screws in an end and one side. Direct and reverse type are available for given work. Detail information is presented in a set of data sheets the company will mail on request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 1201 If you write the maker

Bulletin 712-13 A-C Combination Starting Switches

● Available with fuses or circuit breaker

Allen-Bradley combination starters are popular with machinery manufacturers because (1) they save space, (2) they're easy to install, (3) they provide added safety features, and (4) they're more attractive in appearance than separate disconnect switch and motor starter. Available in seven types of enclosures.
Allen-Bradley Co., 1312 S. 2nd St., Milwaukee 4, Wis.

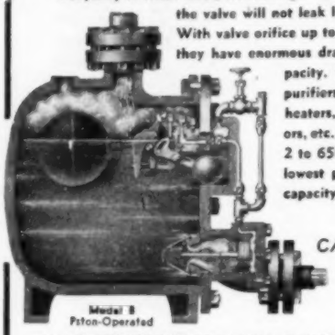
ALLEN-BRADLEY
QUALITY
MOTOR CONTROL

BREVITY—Identify by IEN - 1202 If you write the maker

This Nicholson "Power Service" Trap

WON'T LEAK EVEN IF 'COOKED' DRY

Nicholson piston-operated traps do not depend on buoyancy of float. Thus, even though "cooked" dry, the valve will not leak live steam. With valve orifice up to 2" diam., they have enormous drainage capacity. For steam purifiers, headers, heaters, separators, etc. Pressures, 2 to 650 lbs. The lowest price large capacity trap.



CATALOG 250

Model B Piston-Operated

W. H. NICHOLSON & CO. 199 OREGON STREET WILKES-BARRE, PA.

Sales and Engineering Offices in 53 Principal Cities

BREVITY—Identify by IEN - 1203 If you write the maker

Air-Speed Trade Mark ® SAW AND FILE

Fully Portable . . Light Weight . . Adjustable Stroke . . Finger Tip Control . . Explosion Proof . . Government Approved.

STILL SAWS OFF COSTS!

Light, easy to handle. Cuts almost all metals, with power to spare. Irons out cramped quarters, tough work positions. Instant attachment to air line. A job tested, work proven, cost cutting, air-powered hand tool. Price complete $49.50 F.O.B. Los Angeles.

PLUS AIR-SPEED AIR DRILLS
Straight and pistol grip types.
Noted for power, durability, economy.

Price from $52.50 F.O.B. Los Angeles
Literature Available.

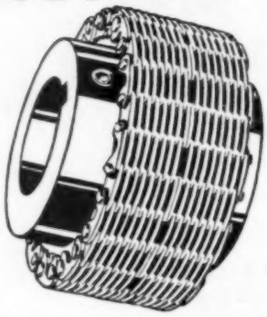
AIR-SPEED TOOL COMPANY
1502 W. Slauson Avenue
Los Angeles 47, Calif. Dept. 1-51

BREVITY—Identify by IEN - 1204 If you write the maker

The All-Metal

RAMSEY FLEXIBLE COUPLING

SIMPLE
STURDY
COMPACT
MADE IN 11 SIZES



Exclusive design provides the flexibility in this all-metal coupling. Can be applied or removed in a matter of minutes. Aluminum Covers available. Prompt shipments from stock. For dimensions, capacities, prices, etc.

WRITE TODAY FOR "THE COUPLING BULLETIN".

SILENT CHAIN DRIVES—FLEXIBLE COUPLINGS

RAMSEY CHAIN COMPANY, INC.
5152 BROADWAY • ALBANY, N. Y.

BREVITY—Identify by IEN - 1205 If you write the maker

RECOVERS FIBER STOCK

A MARX SAVEALL proves 95 per cent efficient in recovering fiber stock from white water effluent in a southwestern paperboard mill. The process is both thorough and economical.

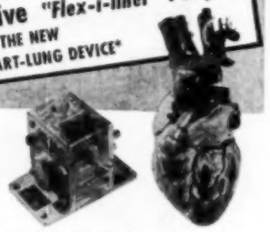
Quotations may be obtained by writing our nearest office describing your problem.

CHICAGO BRIDGE & IRON COMPANY
2123 McCormick Building • Chicago 4, Illinois
Atlanta • Birmingham • Boston • Cleveland • Detroit • Houston • Los Angeles • New York • Philadelphia • Salt Lake City • San Francisco • Seattle • Tulsa
Plants in BIRMINGHAM, CHICAGO, SALT LAKE CITY and GREENVILLE, PA

BREVITY—Identify by IEN - 1206 If you write the maker

VANTON Non-Corrosive "Flex-i-liner" Pumps

THE "HEART" OF THE NEW MECHANICAL HEART-LUNG DEVICE*



NO STUFFING BOXES
NO GASKETS
NO VALVES

Fluid Never Touches Metal

Vanton Pumps are designed for handling a large group of acids such as hydrochloric, hydrofluoric, and sulfuric, alkalis, industrial alcohols, solvents, and many other corrosive liquids and gasses. Liquid or gas pumped never touches metal—contacts only outer surface of "flex-i-liner", inner countersink surface of body block. 35 different combinations of rubber and plastic "flex-i-liners" and plastic pump body blocks to handle your pumping requirements. Used in leading plants throughout the country. Models from fractional to 5 G.P.M. Write for complete information.

• CORROSION FREE • SELF LUBRICATING
• LOW MAINTENANCE • NO CONTAMINATION
• POSITIVE DISPLACEMENT • SELF PRIMING

VANTON PUMP CORP.
Empire State Building, Dept. IE, N.Y. 1, N.Y.

*Write for free reprint of New York Times story on the new Heart-Lung Device using the Vanton "Flex-i-liner" Pump.

BREVITY—Identify by IEN - 1207 If you write the maker

AETNAPLY tips on how to save money ...when using PLYWOOD

1. **Buy smaller panels.** Standard sizes like 3' and 4' widths with 4', 5', 6', 7' lengths cost less in AETNAPLY Hardwoods. Figure smallest panel for your cutting sizes.
2. **Use No. 1 grades** when cutting up panels. No. 1 grade has sound face and allows pieced veneers as in Birch and Maple plywood.
3. **Practice cutting and finishing** techniques on waste panels before using standard sizes for the final run.

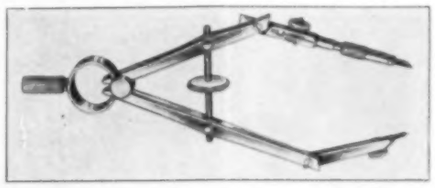
NEED PLYWOOD? Aetna may have just what you want—send in your inquiries.

AETNA PLYWOOD & VENEER CO.
1724 N. Elston Avenue — Chicago 22, Ill.
ARmitage 6-7100 — Teletype: CG305
BRANCH WAREHOUSES: Grand Rapids, Indianapolis, Rockford, Ill.
SALES OFFICES: Detroit; Milwaukee and Green Bay, Wis.; Minneapolis; Virginia Beach, Va.; Marion and West Lafayette, Ind.; Springfield, Ill.
SEE PHONE BOOK

BREVITY—Identify by IEN - 1208 If you write the maker

DRAFTING . . Ink and pencil compass available as unit or in complete sets

Source: BORDEN & RILEY PAPER CO.
58-62 E. 11th St., New York 3, N. Y.



Circle Master trade names new compass combining an adjusting wheel and two jointed legs for both the center and the pen or pencil holder. The pencil holder is adjustable to take all sizes of lead. Smallest available set in the line includes a pencil leg, divider leg, pen, ruling pen and a handle to transform the ruling-pen into a small drawing pen.

BREVITY—Identify by IEN - 1209 If you write the maker

PROTECTING . . Dust mask fits over nose and mouth, weight ½ ounce

Source: GENERAL SCIENTIFIC EQUIPMENT CO.
2785 W. Huntingdon St., Philadelphia 32, Pa.

Aluminum shields held in position by an adjustable elastic head band and replaceable laminated filters make up this new No. 48A dust mask. It is intended for use in areas containing non-toxic dust. It is not suited for use in the presence of fine silica dust, lead, arsenic or other toxic materials.

List price is 30 cents. A package of 25 refills lists at 50 cents. Minimum shipment of 4 masks and 50 refills is $2.20.

BREVITY—Identify by IEN - 1210 If you write the maker

HEAT TREATING . . Quench tank and conveyor apply below a furnace

Source: KLAAS MACHINE & MFG. CO.
4312-16 E. 49th St., Cleveland 9, Ohio

Hot work from a heat-treating furnace is dropped by hand or directly from the furnace into quenching water or oil following installation of this new tank. The work is picked from the bottom of the tank and brought back up as soon as it comes to rest on the wire-mesh conveyor forming a part of the assembly. There is provision to circulate and cool the quenching liquid. The unit shown measures 8 by 2 by 4 feet. Other sizes can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 1211 If you write the maker

TRY THEM FREE

SAVE 75% ON YOUR GLOVE COSTS

PLYGLOV ®Registered Trademark

*PLYGLOVS, the amazing new plastic coated cotton work glove, will outwear 10 pairs of cotton or 4 pairs of rubber gloves on comparable jobs. What's more, they are proof against acids, caustics, oils, petroleum solvents, or water. Their large size provide greater comfort and flexibility.

MAKE YOUR OWN TESTS

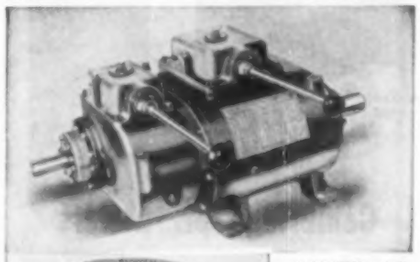
Write to us for a FREE pair of PLYGLOVS. Test them in your own plant, on your own job. See why we can give an unconditional guarantee and still save you up to 75 percent on your glove costs. Available in styles shown above: regular knit wrist, 2-inch cuff, palm coated knit wrist, or 5-inch gauntlet.

THE MILBURN CO.
3212 E. Woodbridge, Detroit 7, Mich.

BREVITY—Identify by IEN - 1212 If you write the maker

WESTERN "SUPER" with 8 SPEED CHANGES

For use on large lathes, boring mills, chemical and rubber machinery, etc., and used for replacement of gear boxes on large radial drills, Bullard vertical turret lathes, etc. CAPACITY 30 HP. In geometric progression of 1.29 (total reduction of 4:1).



(left) "9000 series" has a 5 hp. capacity with input speed of 900 r.p.m. . . . 4 gear changes are available through one-shift-lever (automotive type). Ratios: 1:1, 2:1, 3:1, 4:1.

On special machines where transmissions are required — a standard WESTERN model can often be adapted to give the required spindle speeds . . . and even when modifications are made, a WESTERN for the basis of the design greatly simplifies the problem. Similar transmissions of 10 hp. capacity are available . . . we can supply the necessary V-belts, sheaves, output pulleys and motors from stock.

up to 50 h. p. WESTERN TRANSMISSIONS
WESTERN MANUFACTURING CO. 2396 WESTERN AVENUE, MINNEAPOLIS, MINNESOTA

BREVITY—Identify by IEN - 1213 If you write the maker

BRADLEYS STOP CONTAGIOUS WASHBASIN CONTACTS !

The 54" Bradley serves 8 to 10 persons simultaneously—replaces 8 to 10 ordinary basins.

BRADLEY WASHFOUNTAINS afford maximum health protection in a compact modern wash fixture. Foot-control eliminates contagious basin contacts. Hands touch only the clean tempered spray of running water. Self-flushing bowl prevents collections of dirty water, and reduces maintenance.

Bradleys are ideal for new washrooms, as well as for modernization. They provide greater washing facilities in less space, cut piping connections by 80% and save up to 70% on water. BRADLEY WASHFOUNTAIN CO., 2219 W. Michigan Street, Milwaukee 1, Wisconsin.

Write for illustrated Booklet 4701.

Distributed Through Plumbing Wholesalers

BRADLEY washfountains

BREVITY—Identify by IEN - 1214 If you write the maker

TRIPLOC Plugs and Receptacles

1, 2, 3, 4, 6, 8 pole interchangeable and reversible contact units.

An Exceptionally Versatile Line in the Heavy Duty Field

An exceptionally versatile line, unequalled in the heavy duty field, with a virtually unlimited number of assembly combinations to meet the individual requirements of any portable electrical equipment.

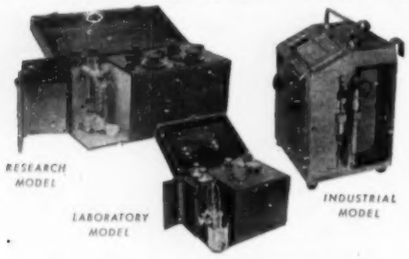
Interchangeable contacts, 1 to 8 poles, can be assembled in standard plug shells and receptacle housings. The protected female contact unit can be assembled in either plug or receptacle for safety to the line side of the circuit. Fusible types and units with one pole grounded are also available.

Automatic bayonet lock with either manual or combination manual and automatic release protects equipment and wiring. Wide range of pressed steel plug shells, receptacles, and cord connectors available in the complete Triploc line, including cast metal housings threaded for watertight gasket seal. Ratings up to 20 amperes, 250 volts DC, 460 AC. Consult your Pyle Catalog 1100, Bul. 1140-1, for complete listings.

CONDUIT FITTINGS • FLOODLIGHTS

THE PYLE-NATIONAL COMPANY
1348 NORTH KOSTNER AVENUE — CHICAGO 51, ILLINOIS

BREVITY—Identify by IEN - 1215 if you write the maker



Cambridge pH Meters

The three portable models illustrated above incorporate new and important advantages. A.C. line operation eliminates battery nuisance. Laboratory and Research models use electron-ray tube for precise null-point indication. Industrial model is direct-reading, continuous-indicating; ruggedly built for plant use.

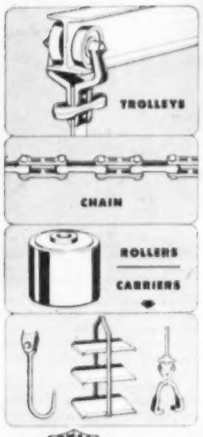
Accuracy: Research .02 pH, Laboratory .05 pH, Industrial .10 pH. Cambridge pH equipment also includes single- and multi-point indicators and recorders. Send for Bulletin 910-MR.

CAMBRIDGE INSTRUMENT COMPANY, INC.
3710 GRAND CENTRAL TERMINAL, NEW YORK 17, N. Y.

Pioneer Manufacturers of
PRECISION INSTRUMENTS

BREVITY—Identify by IEN - 1216 if you write the maker

WEBB CONVEYOR



EQUIPMENT, PARTS AND ACCESSORIES FOR ALL PURPOSES

ASK FOR CATALOGS
NO. 46 TROLLEY CONVEYORS
NO. 51 FLOOR TYPE CONVEYORS

WEBB MFG. CO.
OFFICES IN PRINCIPAL CITIES
8915 ALPINE AVE.
DETROIT 4, MICH.
MANUFACTURERS OF OVERHEAD AND FLOOR TYPE CONVEYORS

BREVITY—Identify by IEN - 1217 if you write the maker

There's a size and type of TM Chain to fit each of your requirements. Choose from Proof Coil, BBB, Steel Loading, Hi-Test, Alloy Steel, Dredge Iron, Conveyor, Machine, Coil, Side, Truck, Passing Link, Well, Anti-Spreader, Trace, Furnace, Champion Weldless, Jack (single or double), Pump or Sash Chain. See your mill supply distributor or send coupon for details on any of these dependable chains.

Each does a definite job — BETTER!

S. G. TAYLOR CHAIN CO., HAMMOND, INDIANA

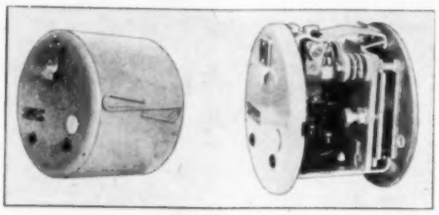
S.G. TAYLOR CHAIN COMPANY
Dept. 4, Hammond, Indiana
Rush details on _____ chain.
Name _____
Address _____

TAYLOR MADE Chain

BREVITY—Identify by IEN - 1218 if you write the maker

DRIVE . . Magnetic disc brake mounts on standard Type-C motor flange

Source: CUTLER-HAMMER INC.
1378 W. St. Paul Ave., Milwaukee 1, Wis.



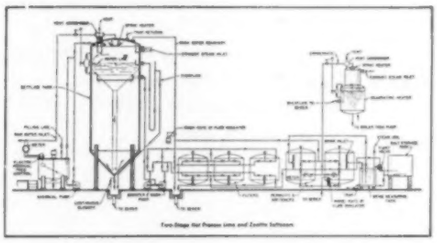
Type CD designates new design in the company's line of magnetic disc-type brakes for mounting without modification on NEMA standard Type-C motor flanges and on other motors fitted with end bells that are correctly drilled. Three sizes rate 1½ to 75 ft. lb. of braking torque for ac. or dc. service. Smallest assembly has a direct-acting brake mechanism. The other two employ solenoids. In all cases the single disc is a solid friction plate. The small unit is available with a manual release. The others count an automatic reset-type manual release as standard.

Enclosures are wrap-around steel with a removable locking pin. Application can be made on open, drip-proof and splash-proof motors and on totally-enclosed, separately-ventilated or fan-cooled motors. In each case closing the motor circuit for operation releases the brake and holds it in released position. Opening the motor circuit permits springs in the brake mechanism to apply the brake and stop the motor.

BREVITY—Identify by IEN - 1219 if you write the maker

WATER TREATING . . Hot process combined with Zeolite for boiler water

Source: PERMUTIT CO.
330 W. 42nd St., Room 700, New York 18, N. Y.


Two-Stage Hot Process Lime and Zeolite Softener

New styrene resin known as Permutit Q has been developed for application in a new combination of hot-process and zeolite water-treating equipment. Raw water is passed first through the company's hot-process softener to lower alkalinity, reduce silica content and to remove some hardness. It is then directed through the zeolite softener to remove all of the residual calcium and magnesium.

The softener is backwashed with hot softened water which is returned to the settling tank and is regenerated with salt in the usual manner. Runs between regenerations are long since the effluent from the softener is low in hardness.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1220 if you write the maker

It's a Robins Troughing Idler—with features no other belt conveyor idler can offer.

Robins Ball Bearing Troughing Idlers fit belt conveyors up to 36" wide. Robins Roller Bearing Troughing Idlers have exclusive Triple Grease Seal which locks grease in, keeps dirt and moisture out. Sizes to fit belt conveyors up to 60". Both types provide exclusive One-Shot Lubrication.

Immediate shipment from stock. Most sizes of Robins Idlers now carried in stock for immediate shipment. For Troughing, Return, or Flat Belt Idlers write for Bulletin 120-A.

ROBINS IDLERS

ROBINS CONVEYORS DIVISION
Hewitt-Robins Incorporated
Passaic, New Jersey

BREVITY—Identify by IEN - 1221 if you write the maker

. . . for Greater SAFETY COMFORT STYLE DURABILITY — *Specify* **CESCO** *Safety Goggles*

made in **3 EYE SIZES BRIDGE SIZES** TO FIT EVERY WORKER AND EVERY WORKING CONDITION

You can rely on CESCO Safety Goggles for:

- ★ Impact resistance
- ★ Shock-proof durable construction
- ★ Correct fit
- ★ Good looking, modern design
- ★ Simple lens replacement

for Information about CESCO's complete line of Safety Goggles see your CESCO distributor or write . .

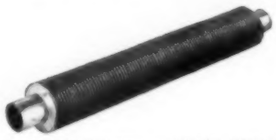
CHICAGO EYE SHIELD CO. • 2320 Warren Boulevard • Chicago 12, Illinois

CESCO FOR SAFETY

OFFICES IN: Atlanta, Birmingham, Boston, Buffalo, Cincinnati, Cleveland, Columbus, Detroit, East Orange, Houston, Los Angeles, Montreal, Philadelphia, Pittsburgh, Seattle, St. Louis, St. Paul, Toledo, Tulsa

BREVITY—Identify by IEN - 1222 if you write the maker

For efficient heat transfer "Ro-Fin" Tubes



There are nearly 100 sizes of ROME EXTENDED SURFACE HELICAL FIN TUBING in production! Available in straight length, coils, or U-bends . . . with or without threaded end connections . . . or to be used with standard flare connections. "Ro-Fin" Tubes for efficient heat exchange are used and specified by nearly all large nationally known manufacturers!

For refrigeration condensers • fluid recovery condensers • diesel engine cooling • concealed radiation convectors • steam condensers • fan-type unit heaters • all heat transfer work

Write for information on your heat transfer problems:

ROME
TURNEY RADIATOR COMPANY

200 East Front Street • Rome, New York

BREVITY—Identify by IEN - 1223 if you write the maker

MORE SPEED MORE SUPPORT

IMMEDIATE DELIVERY!

PADDOCK

BALL-BEARING BAND SAW GUIDES

You'll find PADDOCK BALL-BEARING BAND SAW GUIDES more than pay for themselves in: (1) Reducing blade breakage; (2) Cutting more materials; (3) Protecting workmen; (4) Speeding up production; (5) Conserving man-power.

Ball-bearing wheels, turning with blade, give strong friction-free support to saw blade. Wheels are inchangeable for years longer wear. They're of strong steel construction. Write today for Free Circulars and Prices.

PADDOCK TOOL COMPANY
1418 Walnut Street Kansas City, Mo.
Guide Makers Since 1920

Paddock BALL-BEARING BAND SAW GUIDES

BREVITY—Identify by IEN - 1224 if you write the maker

ROLLAWAY SEMI-LIVE SKIDS AND JACKS

FEATURING THE RE-NU TOP

Steelbound Rollaway Skids combine the best features of bolted and welded designs. The frame supporting members are arc-welded, and the renewable hardwood deck is tightly clamped with steel bolts of extra tensile strength. Welded-in, heat-treated, steel connecting pin. Semi-steel rubber-tired or Flor-Savr wheels with Hyatt roller-bearings, heat-treated steel axles.

CAPACITIES: 1500, 2500, and 5000 POUNDS

YALE AND TOWNE ROLLAWAY JACKS are stocked at the Lanham Company's plant and are sold and shipped directly from Louisville for use with ROLLAWAY SKIDS.

SECTIONAL BINS RE-NU TOP SKID PLATFORMS SKID BOXES

THE LANHAM COMPANY

1406 S. 12th St., Louisville, Kentucky

BREVITY—Identify by IEN - 1225 if you write the maker

There's profitable reading for you in the NEOPRENE NOTEBOOK

- ✓ New products
- ✓ New methods of reducing maintenance costs
- ✓ New solutions of production problems
- ✓ New improvements on old products

Put your name on our mailing list now for your FREE subscription

E. I. du Pont de Nemours & Co. (Inc.)
Rubber Chemicals Division D-2, Wilmington 98, Delaware
Please send me free issues of the Neoprene Notebook.

Name_____
Position_____
Firm_____
Address_____

NEOPRENE

The rubber made by Du Pont since 1932

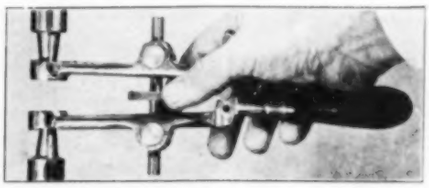
DU PONT

BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

BREVITY—Identify by IEN - 1227 if you write the maker

WELDING . . Electrode tip dresser restores tip shape in spot weld machine

Source: S-M-S CORP.
1165-70 Harper Ave., Detroit 11, Mich.



Model 3 is a new hand-operated tip-dressing tool for a spot welding machine in which interchangeable hardened-steel cutters are applied in outward-facing heads and are brought into cutting contact by operating a thumb-screw. The tool applies with the electrodes in retracted position at any distance apart between 1 and 4 inches. Dressing is by rotating the tool by hand to remove a small amount of worn material from each tip.

The tool body is made of forged brass with one jaw solid on the handle and the other pin-connected for spacing adjustment so the two cutters will be parallel at a given spacing between the electrodes. The tool cannot be harmed by dressing with current on. List is $18.50 with a pair of cutters.

BREVITY—Identify by IEN - 1228 if you write the maker

PUMP . . Motor driven vacuum unit, for testing and dehydrating application

Source: BEACH-RUSS CO.
50 Church St., Room 1876, New York 7, N. Y.

Replaces older duplex test pump

Model A is a new two-stage vacuum pump mounted with its direct-connected motor on a base measuring 28 in. in length. The motor rates 1/5 hp. and is available to specified current characteristics. The pump blanks off at 100 microns. It is designed particularly for testing and dehydration applications on refrigerating and air-conditioning equipment. No lubricating attention is required. Assembly weight is 80 lbs.

BREVITY—Identify by IEN - 1229 if you write the maker

WHEEL . . Made of molded plastic for trucks and casters, 4 to 8 inches

Source: HAAS CORP.
48 Thomas St., Mendon, Mich.

Marvatex is a new molding of canvas-filled macerated phenolic and resin compound to produce a wheel that will ride without marring, scratching or showing excessive wear on concrete, asphalt, tile, wood, marble. Seven sizes range between 4 by 1½ in. and 8 by 1⅞ in. in diameter and width.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1230 if you write the maker

Utmost Comfort for Workers' Hands... Elastic-Knit-Lined

PIONEER

STANZOIL®

Duplex NL-34's

Lightweight easy-to-wear Stanzoil Duplex NL-34's are designed expressly for comfortable hand protection. Save you money, protect workers' hands. Elastic knit lining stretches . . . allows freedom of action for working hands, speeds production. These DuPont neoprene gloves are extra durable in harmful liquids. Available in light weight, heavy weight; 10½", 12", 14"; standard sizes.

Industrial Glove Division

The PIONEER Rubber Company
636 Tiffin Rd., Willard, Ohio • Los Angeles

OVER 30 Years OF QUALITY GLOVE MAKING

BREVITY—Identify by IEN - 1231 if you write the maker

PNEUMATIC TIMERS for Every Job

A.C. OR D.C.

FOR TIMING
Motor acceleration
Machine sequences
Process industry operations
Resistance welds, etc.

Invertible A. C. Magnet makes proven design more flexible

- New invertible A.C. magnet provides either "on-delay" or "off-delay" operation—easily converted from one operation to the other.
- Proven accuracy of the Square D pneumatic timer is unaffected by normal changes in voltage and ambient temperature. Contacts have snap action.
- A wide variety of A.C. and D.C. timers enables you to select exactly the right one for any job.

Write for Bulletin 9050. Square D Company, 4041 N. Richards Street, Milwaukee 12, Wisconsin

Ask Your Electrical Distributor for Square D Products

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 1232 if you write the maker

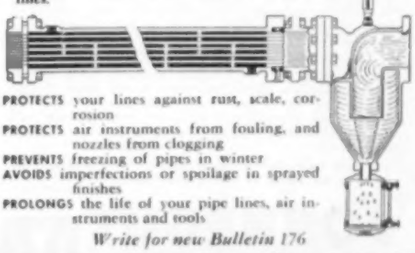
You Can be Sure of Clean Dry Air for your Compressed Air Tools

3500 Gallons

1 YEAR'S water extraction from air lines equipped with Adams Aftercooler and Cyclone Separator

with ADAMS Aftercooler and Cyclone Separator

- Reducing compressed air temperature to within 10° of the cooling water, Adams equipment condense and removes destructive water and oil vapors from your air lines.



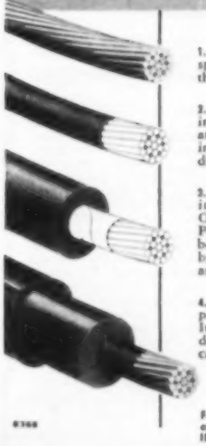
PROTECTS your lines against rust, scale, corrosion
PROTECTS air instruments from fouling, and nozzles from clogging
PREVENTS freezing of pipes in winter
AVOIDS imperfections or spoilage in sprayed finishes
PROLONGS the life of your pipe lines, air instruments and tools

Write for new Bulletin 176

R. P. ADAMS CO., INC. 219 E. PARK DRIVE BUFFALO 17, N. Y.

BREVITY—Identify by IEN - 1233 if you write the maker

4 reasons why OKOLITE-OKOPRENE CABLES EXTEND CIRCUIT LIFE



1. OKOLOY-COATING ON CONDUCTORS—the special corrosion-resistant lead alloy that outlasts tinning 2 to 1.

2. SEMICON TAPE over conductors—used in all Okolite-Okoprene cables operating at over 2,000 volts—eliminates internal corona cutting and increases dielectric strength.

3. OKOLITE INSULATION—moisture-resisting, high-voltage, time-proved Okolite is made with Up-River Fine Para, the best grade of natural rubber. This oil-base insulation approved by Underwriters' Laboratories, Inc. as Type RWSN.

4. OKOPRENE SHEATH—the pioneer neoprene sheath—developed by Okonite. Its durability and stability have been demonstrated on millions of feet of cable installations.

For complete information on characteristics and applications, write for Bulletin IE-1037, The Okonite Company, Passaic, N. J.

THE BEST CABLE IS YOUR BEST POLICY

OKONITE insulated wires and cables

BREVITY—Identify by IEN - 1234 if you write the maker

NO MORE SHUT-DOWN PERIODS

Installation of this Syntron SF-01 Screening Feeder eliminated shutdown period at the end of each shift allowed for each centerless grinder operator to clean coolant tank.

Equipped with a 6" x 15", 60 mesh zinc screen, the Feeder removes over 90% of the sludge from the grinding coolant. This sludge, consisting of steel filings and abrasive grains, and with a moisture content of less than 3%, is fed into a receptacle beside the cooling tank. Continuous, automatic sludge removal not only eliminated costly shutdown periods, but also provided cleaner coolant liquid throughout the shift.

SYNTRON

"Vibra-Flow"

SCREENING FEEDERS

For the efficient removal of sludge from coolant liquids used on centerless grinders, automatic screw machines or any type machine requiring a coolant.

Write to

SYNTRON CO.

410 Lexington Ave. Homer City, Pa.

BREVITY—Identify by IEN - 1235 if you write the maker

NOW . . . A POLISHER THAT'S UNIVERSALLY ADJUSTABLE!

Built for use with the Vonnegut Brush-Backed Polishing Head, this unique tool is designed for sanding, smoothing or finishing contoured patterns—such as mouldings and formed or extruded shapes.

The brush bristles of the head automatically force abrasive strips to conform with and follow the shape of the pattern. The unique spindle stand (adjustable to any angle through 180° from vertical to vertical with head below or above the motor) makes it possible to bring the Vonnegut head into proper relation with a vertical, horizontal or angled surface of any pattern.

Don't hold back. Tell us about your finishing problems; we may have the answer to cutting your costs.

VONNEGUT MOULDER CORPORATION

1827 MADISON AVENUE • INDIANAPOLIS 25, INDIANA

BREVITY—Identify by IEN - 1236 if you write the maker

GET THE EXTRA ADVANTAGES OF

Stepless Heat Control

FROM 350°F. TO 1850°F.

WITH THESE LOW COST TEMCO ELECTRIC FURNACES

Economical to own and operate, TEMCO models RCE (illustrated) and GTP are ideal "utility" units for the laboratory, shop or plant. Exceptionally handy for general lab work, production control and heat treating. Both models have built-in TEMCOMETER stepless control which is unaffected by line voltage fluctuations and lets you 'select *and hold* any temperature from 350° to maximum . . . indicating-type pyrometer calibrated in F. and C. scales . . . embedded heating element completely surrounds chamber . . . cast aluminum body . . . special insulation. Chamber dimensions: Model RCE — 4⅝" W., 4⅝" H., 6" D.; Model GTP — 4" W., 3⅝" H., 3⅜" D.

Prices Model RCE Complete	Prices Model GTP Complete
For 115V. AC or 230V. AC	For 115V. AC or 230V. AC
$85.00	$67.50

Write for data and dealer's name

THERMO-ELECTRIC MANUFACTURING CO.

482-2 Huff Street, Dubuque, Iowa

BREVITY—Identify by IEN - 1237 if you write the maker

TRUCK . . Power lift fork design electric drive, 3 sizes, 1½ to 3 ton

Source: BAKER-RAULANG CO.
1248-52 W. 80th St., Cleveland 2, Ohio

Type-FC Center Control designates three new battery-powered trucks featuring design for quick maneuvering and access for inspection and servicing. The operator rides in standing position with the horizontal steering wheel at his left, the travel and load-handling controls at his right and a pedal for power-control and braking under his left foot. He has clear vision of the load pickup on the right-hand side of the uprights.

Control equipment not on the face of the panel in front of him is just back of the panel where it is quickly accessible. Here also are the power-load axle, travel motor, controller and steering gear. The hoist and tilt motor and the hydraulic pump are back of the panel on the left-hand side. Steering is at the rear axle. An interlock cuts off power when the brake is applied. The travel controller can be reversed and the accelerator advanced to apply dynamic braking.

Specifications	FC-30	FC-40	FC-60
Rating, 48 in. load	1½ ton	2 ton	3 ton
Width over wheels	35 in.	37 in.	39 in.
Outside turn radius	74 in.	74 in.	81 in.
Min. intersect aisles	65 in.	65 in.	70 in.
Overall height	83 in.	83 in.	83 in.
Initial lift	63 in.	63 in.	61 in.
Telescope lift	126 in.	126 in.	126 in.
Fork length	36 in.	36 in.	36 in.
Wheelbase	43 in.	43 in.	48 in.
Weight with battery	6,500 lb.	7,500 lb.	10,500 lb.
Battery	36 v. 400 ah.	36 v. 500 ah.	36 v. 650 ah.

BREVITY—Identify by IEN - 1238 if you write the maker

CLEANING . . Laboratory apparatus cleans mercury that has become fouled

Source: BETHLEHEM APPARATUS CO.
823 Front St., Hellertown, Pa.

Five pound lots, as compared to the 25-lb. quantities taken by the equipment previously described IEN-9300-49, are cleaned by this new mercury oxifier and Type-G filter. Contaminated mercury in this quantity is loaded into the motor-driven oxifier where it is violently agitated for several hours to cause base-metal contaminations to form oxidized skins and precipitate as metallic oxide powders. Then the mercury is poured into the filter which operates on the gold-adhesion principle.

Impurities including dust, oxide scum, oil, water, acid residue are removed to leave the purified mercury in condition suited for use in precision instruments. The oxifier measures 5 by 9 by 7 inches. It weighs 8 pounds. Its 1/20-hp. motor operates on 110-volt 60-cycle ac. The filter measures 3½ by 6½ in. and weighs about one pound.

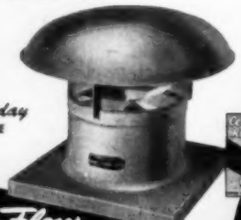
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1239 if you write the maker

NEW 12" VENTILATOR PROVIDES Positive Controlled Ventilation AT ALL TIMES

FOR TOILETS
LOCKER ROOMS
AND SMALL BUILDINGS

New 12" Power-Flow Roof Ventilator is a motor-driven fan in weatherproof housing. Provides 975 cubic feet of air per minute at free delivery. Permanently lubricated, enclosed motor. Removable head. Copper insect screen. Automatic shutters available at additional cost.



Write Today FOR COMPLETE DETAILS

Power-Flow

ROOF VENTILATORS

Du-Rathesar Fans Division
AMERICAN MACHINE AND METALS, INC.
East Moline, Illinois

BREVITY—Identify by IEN - 1240 if you write the maker

NO SPRINGS TO BREAK in the Nutting JACK IT'S ALWAYS DEPENDABLE

The Nutting Jack is the ONLY jack operated entirely by gravity and leverage. With no springs to break, there is no danger of your whole jack-skid system suddenly being put out of service.

One lift truck and two dead skids cost about the same as two *Nutting Jacks and twelve semi-live skids.* That's one reason why the Nutting Jack and Skid system can be such a money-saver in your plant. Material stored on semi-live skids is made mobile in a hurry. The jack may be coupled to one skid, then uncoupled and coupled to another faster than the time it takes to tell about it.

Send for Bulletin 48-JS

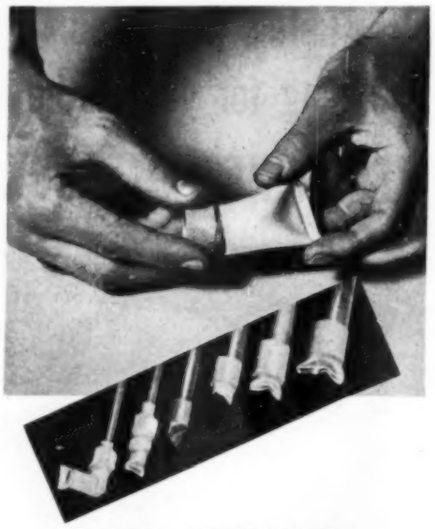
Look in your classified phone directory for your Nutting representative, or write for Bulletin 48-JS. It will pay you to get all the facts on this superior Nutting Jack-Skid handling system.

Nutting makes everything in floor trucks, wheels, casters.

NUTTING TRUCK AND CASTER COMPANY

2011 Division Street, Faribault, Minnesota

BREVITY—Identify by IEN - 1241 if you write the maker



Here's LOW-COST Protection against HIGH-COST Damage and Contamination

Here's the way to safeguard tubing, threading and other delicate parts from contamination and injury during processing and handling—with inexpensive, easily applied G-E sealing caps, tubes and sleeves.

Tough G-E plastics seals keep dirt and moisture from refrigerator piping . . . protect equipment from chemicals in plating solutions . . . make valves tamper-proof. And, because they have good dielectric properties, they are used as *insulation* for small parts.

To use, simply expand G-E plastics seals in the dilating solution, apply—and they quickly shrink at room temperature to provide a tightly fitting seal. Stable under heat, they withstand conventional high temperature baking cycles. Write today for details. Address: Section G-1, General Electric Company, Chemical Department, Pittsfield, Massachusetts.

G-E SEALING CAPS, TUBES and SLEEVES

You can put your confidence in

GENERAL ELECTRIC

▼ BREVITY—Identify by IEN - 1243 If you write the maker ▼

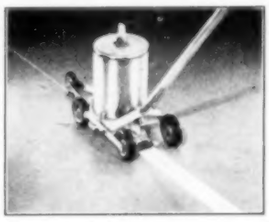
8-Page Condensed Catalog

shows Veeder-Root Counters for mechanical, electrical and manual operation. Write for a free copy.

VEEDER-ROOT INC.
HARTFORD 2, CONNECTICUT

▼ BREVITY—Identify by IEN - 1244 If you write the maker ▼

MARK-A-ZONE
Hand Propelled, Gravity Feed Striper



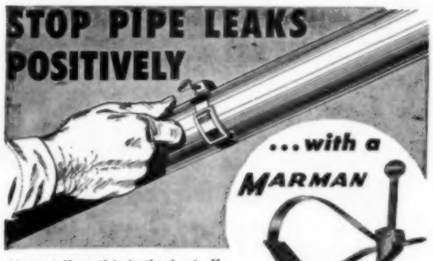
Works fast and is practical for all uses. For parking lots, games, warehouses and all spaces where an orderly and more economical use of space is desired. Uses instant drying lacquer type or other paints. Starts painting automatically when contact with surface is made, stops flow when raised. Shipping weight 24 pounds.

$128.50 with 2" and 3⅜" heads
98.50 with 3⅜" head only
88.50 with 2" head only

Inquire through your local supplier, or write direct.

S. B. BEUGLER (Stripers)
3667 Tracy Street Los Angeles 39, Calif.

▼ BREVITY—Identify by IEN - 1245 If you write the maker ▼



Users tell us this is the best all-around pipe leak clamp made.

IT'S QUICK: One person can install a Patchmaster in 30 seconds—even in inaccessible locations because clamp is light and forms naturally to pipe contour.

AMAZINGLY STRONG: Made of flexible stainless steel for strength and corrosion resistance it withstands pressures up to 800 p.s.i.

PERMANENT: There's no need to make any further repairs—the Hycar pad and clamp is resistant to deterioration by water, gas, oil, etc.—whole unit will actually outlast the pipe.

HIGHLY ECONOMICAL: The Patchmaster is an inexpensive permanent repair or it can be used and reused, saving you money either way.

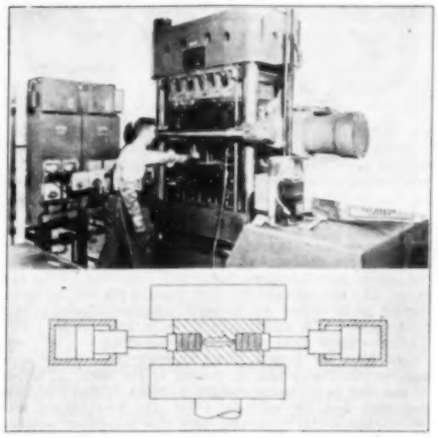
4 SIZES FOR ALL PIPE FROM ½ TO 4 INCHES
For information and literature on Marman's complete line of pipe leak clamps write Dept. I-2.

MARMAN PRODUCTS CO. INC.
940 W. FLORENCE AVE., INGLEWOOD, CALIF.

▼ BREVITY—Identify by IEN - 1246 If you write the maker ▼

PLASTIC MOLDING . . Hydraulic press mounts two horizontal transfer rams

Source: ELMES ENGINEERING DIVISION
1165 Tennessee Ave., Cincinnati 29, Ohio



New assembly of one of the company's 300-ton hydraulic compression molding presses mounts two 50-ton horizontal transfer rams in opposed arrangement at the same elevation as the parting line of the mold when the press is closed. The rams move in to inject thermosetting material that has been placed in the form of slugs, or preheated preforms, in cylindrical chambers on the two sides of the mold cavity. The operator attends the press and also the preform heating equipment on his left. He places the preforms while the mold stands open for access to the lower halves of the chambers.

The press can average 25 to 30 cycles per hour in the transfer setup. It can be employed also on short-run compression molding. It provides large die space with free access front and back. It is pushbutton controlled to start its time-controlled automatic cycle. It is representative of special equipment the company is prepared to design and supply for specified requirements.

▼ BREVITY—Identify by IEN - 1247 If you write the maker ▼

BEARINGS . . Sapphire and glass units with steel pivots for instrument use

Source: DUOTONE COMPANY
51 Locust St., Keyport, N. J.

Initial production in the company's return to manufacture of precision instrument bearings for military purposes is in sapphire and glass with pivots made of steel and also of non-magnetic precious metals. Firing pins and similar small precision parts are also included. The parts and bearings are subject to specification for given applications, precision and quantity.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 1248 If you write the maker ▼

McDonald
KANISTER KIT
ON-THE-SPOT-FIRST-AID

☆ **MOUNTS ANYWHERE** . . . in the cab of your truck, in outbuildings, on posts in construction areas. Keep a McDonald Kanister Kit handy at all times!

☆ **TREAT INJURIES INSTANTLY!** Kanister Kit affords instant first aid—prevents dangerous delays in the treatment of burns, cuts and other injuries.

☆ **EASY, SANITARY TO USE** . . . Weatherproof, metal canister opens with a twist of the wrist. Complete roll-up kit may be held on forearm to prevent contamination from ground and other sources.

☆ **STANDARD ASSORTMENTS AVAILABLE** of quality first aid materials. Or, kit can be filled to your specifications.

Write for bulletin and prices, Today!

B. F. McDONALD CO.
Manufacturers & Distributors of Industrial Safety Equipment
3110 S. HOOVER ST., LOS ANGELES 37, CALIF.
Other Offices in San Francisco & Houston

▼ BREVITY—Identify by IEN - 1249 If you write the maker ▼

INDUSTRIAL INKS To Mark Anything!

Production engineers use "Clear Print" Wood Block Stamp Pads and Opaque Inks for the best clear, sharp, fast drying impressions. To cut down on lost shipments and rejected assemblies because of poor identification, use "Clear Print" for shipping room direction stamps and parts numbers. You are assured of permanently legible markings. Many bright visible colors available.

- For marking on non-porous materials such as:
- WOOD, METAL, GLASS, PLASTIC, RUBBER, PAPER AND MANY OTHERS.

PHILLIPS PROCESS CO., INC.
192 MILL ST., ROCHESTER, N.Y.
L. A. PHILLIPS, President

▼ BREVITY—Identify by IEN - 1250 If you write the maker ▼

"We don't have any more needless fuse blows on our Air Compressor circuit... *since we installed* FUSETRON dual-element FUSES"...

"Prior to the time we installed Fusetron fuses to protect the circuit feeding the 125 h.p. 220 volt, 3 phase motor on our air compressor, we were troubled with fuses blowing needlessly.

"On an average of once every two weeks, one of the 400 ampere, 250 volt renewable fuses protecting the circuit would open on the starting current of the motor.

"About May of 1947, we replaced the fuses with 400 ampere, Fusetron fuses. Since then, we have not had the circuit down once because of a needless blow."

Leon C. English, Chief Electrician
Link Belt Company, Indianapolis, Ind.

Fusetron Fuses

Give 10 Point Protection

1 *Protect against short-circuits.
2 Protect against needless blows caused by harmless overloads.
3 Protect against needless blows caused by excessive heating — lesser resistance results in much cooler operation.
4 Provide thermal protection — for panels and switches against damage from heating due to poor contact.
5 Protect motors against burnout from overloading.
6 Protect motors against burnout due to single phasing.
7 Give DOUBLE burnout protection to large motors — without extra cost.
8 Make protection of small motors simple and inexpensive.
9 Protect against waste of space and money—permit use of proper size switches and panels.
10 Protect coils, transformers and solenoids against burnout.

*Fusetron Fuses have high interrupting capacity as shown by tests of the Electrical Testing Laboratories of New York City.

Don't risk losses in your plant!

One **needless** shutdown, one **lost** motor, one **destroyed** panel or switch, one **burned out** solenoid— May cost you more than replacing every ordinary fuse with a FUSETRON dual-element fuse. Protect yourself by installing them in every set of fuse clips throughout the entire electrical system.

FUSETRON
TRUSTWORTHY NAMES IN ELECTRICAL PROTECTION
BUSS

BUSSMANN MFG. CO.,
Division of McGraw Electric Co.
University at Jefferson
St. Louis 7, Mo.

Sold Through Wholesalers

BREVITY—Identify by IEN - 1252 If you write the maker

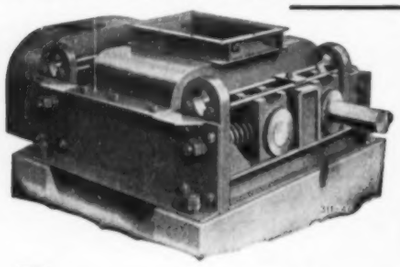
- Full Line Capacity
- Positive Seal
- High Speed Operation
- Low First Cost
- Low Operating Cost
- Low Maintenance Cost
- Over 500 Straightway and 3-Way Models in ¼"—1¼" Sizes

Ask Ross for Any Air Control Information

Ross makes valves only—hundreds of types and sizes. Take advantage of our quarter century of experience and concentration on control and application of air power!

ROSS OPERATING VALVE CO.
120 E. GOLDEN GATE AVE., DETROIT 3, MICHIGAN

BREVITY—Identify by IEN - 1253 If you write the maker



DOUBLE ROLL CRUSHERS

(pictured and described in Bulletin No. 794) are our answer to your question: "I have something to reduce—what will I use?" Whether it's material or costs, Jeffrey Double Roll Crushers will likely do the trick. They are widely used for reducing a wide variety of materials—coal, coke, chemicals, cinders, dry clay, burned lime—to 1½" and larger. A minimum of fines, of course. May we expect that question soon?

JEFFREY
THE JEFFREY MANUFACTURING CO.
914 N. Fourth Street Columbus 16, Ohio

BREVITY—Identify by IEN - 1254 If you write the maker

Since 1887

MILWAUKEE WROT WASHERS

Better **WASHERS**

...Competitively Priced

Large volume production, the most advanced methods and facilities, plus more than 60 years of continuous experience in the manufacture of Washers, are factors that enable us to offer you top quality washers and stampings at competitive costs. Over 22,000 sets of dies for making Washers of every type (Standard and Special), from every type of material, for every purpose, in any finish. STAMPINGS of all descriptions; Blanking, Forming, Drawing.

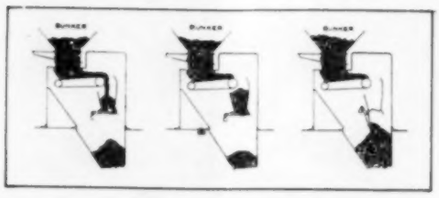
Submit your blueprints and quantity requirements for estimates.

WROUGHT WASHER MANUFACTURING CO.
The World's Largest Producer of Washers
2207 S. BAY ST., MILWAUKEE 7, WIS.

BREVITY—Identify by IEN - 1255 If you write the maker

WEIGHING . . Automatic scale weighs coal from a bunker to a boiler

Source: RICHARDSON SCALE CO.
666-700 Van Houten Ave., Clifton, N. J.



Pressure-tight construction to prevent loss of primary air from a boiler features the company's new Model K-89 automatic coal scale. The assembly will hold against 60 in. of back pressure without loss of air. It is available with 400 and 500-lb. weigh hoppers for hourly capacities of 30 and 40 ton. The inlet opening for connection to the bunker measures 20 by 20 inches. An eye-level indicator is used to test for accuracy. It is sensitive to ½ oz. in 100 pounds. A mechanical counter keeps track of the operations.

Coal from the bunker moves through the opening to a motor-driven feeder belt at the top of the scale. It is fed by the belt to the counterbalanced weigh hopper which is suspended from the weighing beam. The beam moves into balance position as the hopper fills. The movement actuates control equipment to stop the belt, open the hopper for discharge after which the hopper door recloses and the cycle repeats. If the accumulating coal in the downspout piles sufficiently high it will hold the door open so no further weighing will take place until the excess amount is used up.

Bulletin 0250, 12 pages, presents illustrated description of the equipment with detail information on its features.

BREVITY—Identify by IEN - 1256 If you write the maker

BEARINGS . . Ball bearing flange and pillow block assemblies to 1¼ in.

Source: BOSTON GEAR WORKS
63 Hayward St., Quincy 71, Mass.

Safety-Vent-Seal designates the labyrinth seal employed in this new line of flange and pillow-block ball bearings. The seal permits escape of excess grease that may be introduced into the bearing through the lubricant fitting. It seals the remaining grease in and prevents entrance of dirt or dust. It is designed so it cannot be blown out by excess pressure from a lubricant gun.

The bearing element employs chrome-alloy steel races with spherical ground outside diameter for self-aligning action. The housing in both designs is a one-piece rigid unit made of cast iron. The company carries both in stock in its regular outlets in a range of shaft sizes from ½ to 1¼ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 1257 If you write the maker

QUICK CHANGES—Simply space the stock guides, set jaw clearances and change the stroke by rotating a dial . . . set-ups are that easy!

MAKES MORE PROFIT—No more slow hand-feeding . . . No more wasted time on long, tedious set-ups!

EASY ATTACHMENT—2-bolt installation.

ACCURATE—No slippage, no miss-feeding, no over-feeding. Positive stops for ultra accuracy.

HANDLES ALL STOCKS—From foil to two by fours! Feeds singly or in multiple.

SAVE 2/3 to 3/4 of cost!

GET ALL THE FACTS! Write for detailed literature, sizes and prices.

GREAT WESTERN TOOLS, INC., 3304 N. San Fernando Blvd., Burbank, Calif.

BREVITY—Identify by IEN - 1258 If you write the maker

MARVEL No. 8, Capacity 18" x 18"

There is no other sawing machine like it. The work remains stationary. The blade is guided with a 90° twist and power fed vertically through the work. The saw blade and column can be instantly swung and clamped at any angle to 45° either right or left from vertical for miter cutting.

The number 8 MARVEL saw will handle the smallest, as well as the largest work up to 18" x 18". It will cut-off, trim, miter, notch, and split all bar stock, pipe, structural sections, moulding, tubing, or irregular shapes.

Write for our catalog, containing valuable information, enabling you to select a metal saw best suited to your work.

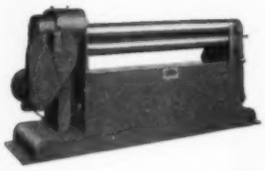
MARVEL Metal Cutting **SAWS**
Better Machines—Better Blades

ARMSTRONG-BLUM MFG. CO.
"The Hack Saw People"
5700 Bloomingdale Ave. Chicago 39, U.S.A.

BREVITY—Identify by IEN - 1259 If you write the maker

REED ENGINEERING COMPANY — MODERN METALWORKING MACHINES

1009 W. Fairview Carthage, Mo.



REED PLATE BENDING ROLLS

- ★ IN 24 MODELS, RANGING FROM 3 FT. x 14 GA. TO 8 FT. x ¼ IN. CAPACITY
- ★ RUGGED, ALL STEEL CONSTRUCTION
- ★ BUILT-IN, SILENT WORM GEAR DRIVE
- ★ DURABLE, SPECIAL BRONZE BEARING
- ★ POWER ADJUSTMENT AND AIR DROP END AVAILABLE ON MOST MODELS

WRITE FOR BULLETIN 76

BENDING ROLLS ★ WELDING POSITIONERS & ROLLS ★ OFFSET & CONTOUR FORMERS ★ ASSEMBLY FIXTURES

★ SPECIAL MACHINES & FIXTURES ★

BREVITY—Identify by IEN - 1260 If you write the maker

IT MAKES NO DIFFERENCE...

Regardless of whether the liquids you handle are highly volatile or extremely viscose, Viking pumps them all . . . efficiently and consistently. It is only necessary that you instruct us as to what type of liquid you are pumping.

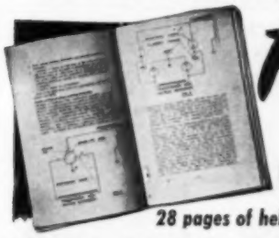
The VIKING ROTARY "GEAR WITHIN A GEAR" PUMP handles ALL clean liquids, regardless of viscosity . . . and what's more, you'll find it a thrifty, willing worker with low power requirements and efficient operation.

Write for free Bulletin 51SF

VIKING AN HONORED NAME IN PUMPING

VIKING PUMP CO. Cedar Falls, Iowa — See Our CATALOG IN SWEETS

BREVITY—Identify by IEN - 1261 If you write the maker



Free!

FROM WESTERN PRECIPITATION

28 pages of helpful facts about

COTTRELL ELECTRICAL PRECIPITATORS

THIS HELPFUL 28 PAGE BOOKLET — Prepared by Western Precipitation Corporation, *pioneers in the commercial application of* COTTRELL *Precipitators*—summarizes and illustrates many of the basic facts you should know about COTTRELL Precipitators for use in recovering industrial dusts, mists, fogs, fumes, fly ash and other suspensions from gases. Written particularly to answer questions of design engineers, plant engineers and others interested in COTTRELL Precipitators, this booklet outlines the various types available, how they operate, principal types of electrical systems and rectifiers, shell construction, other helpful data.

As long as the supply lasts, a free copy will be sent on request to our nearest office. Write for Bulletin No. C103 today!

WESTERN Precipitation CORPORATION

ENGINEERS, DESIGNERS & MANUFACTURERS OF EQUIPMENT FOR COLLECTION OF SUSPENDED MATERIALS FROM GASES & LIQUIDS

Main Offices: 1011 WEST NINTH STREET, LOS ANGELES 15, CALIFORNIA
CHRYSLER BLDG., NEW YORK 17 • 11 LaSALLE ST. BLDG., 1 N. La SALLE ST., CHICAGO 2 • HOBART BUILDING, SAN FRANCISCO 4, CALIFORNIA
PRECIPITATION CO. OF CANADA, LTD., DOMINION SQ. BLDG., MONTREAL

BREVITY—Identify by IEN - 1262 If you write the maker

Write for your copy

THE BABCOCK & WILCOX TUBE CO.

General Offices: Beaver Falls, Pa.
Plants: Beaver Falls, Pa., and Alliance, O.

B&W SEAMLESS and WELDED TUBES

BREVITY—Identify by IEN - 1263 If you write the maker

Repair CRACKED CONCRETE FLOORS

When your concrete floors develop cracks, ruts, shallow holes or rough spots, repair them with Smooth-On No. 7B Quick Floor Patch Cement. It comes in powder form ready to mix with water. Simply apply Smooth-On No. 7B as you would plaster. Smooth-On No. 7B expands slightly as it hardens, insuring a secure, tight fit. You get an iron-hard surface that can take the punishment of heavy traffic. Order Smooth-On No. 7B Quick Floor Patch Cement in 1, 5, 20, or 100 lb. size.

FREE Folder and Repair Handbook

Write for your copy of the illustrated Smooth-On Quick Patch folder and the famous Smooth-On Repair Handbook. Pocket size, 40 pages, 170 simple illustrations. Shows how to make many time-saving, money-saving repairs.

SMOOTH-ON MFG. CO., Dept. 1
370 Communipaw Ave., Jersey City 4, N. J.

SO-349

Do it with SMOOTH-ON
QUICK FLOOR PATCH CEMENT

BREVITY—Identify by IEN - 1264 If you write the maker

HANDLING . . Load sling, 1 to 4 legs, 3/8 to 1 1/2 in. chain

Source: CLEVELAND CHAIN & MFG. CO.
Henry & Broadway, Cleveland 5, Ohio

Length and number of legs are to specification in this new line of chain slings. The chain is hand forged from domestic or Swedish iron as desired. It is equipped with rings and slip hooks in standard construction. Elongated links can be employed at the chain end and grab hooks substituted for the sling hooks to meet requirements.

Safe working load is 2,700 lb. for a single-leg sling made of 3/8-in. chain. It is 40,800 lb. when the chain is 1 1/2 inches. The 5/8-in. chain on a 3-leg sling with the angle between legs of 60 deg. rates 4,700 pounds. The 1 1/2-in. 3-leg assembly on the same angle rates 88,500 pounds. The links can be seen to elongate under overload before they will break.

BREVITY—Identify by IEN - 1265 If you write the maker

PAINTING . . Hard facing material for surfaces of wood foundry patterns

Source: CARBOLINE CO.
7601-5 Forsyth Blvd., St. Louis 5, Mo.

To wear proof foundry patterns

Type CK designates a new liquid coating material for brush application on wood patterns. The coating hardens to a smooth surface to assist in a clean draw from a sand mold. On application it penetrates into the wood to make a permanent bond with it. The coating is impervious to moisture. It will not oxidize on exposure to air. It withstands heat to 350 deg. F. The company will supply instructions.

BREVITY—Identify by IEN - 1266 If you write the maker

WELDING . . Regulator and meter feeds inert gas to shielded arc torch

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

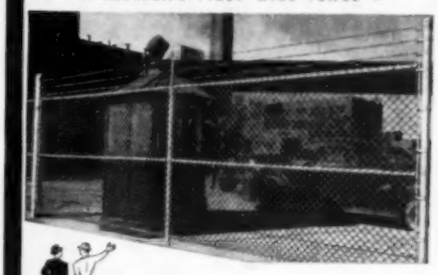
Type R-502 designates a new combination of pressure regulator and flow meter for use with the company's Heliarc and its Argon Metal Arc welding equipment to control flow of helium or argon to the welding torch tip. The three-stage regulator maintains constant inlet pressure and controls the flow. A float-type tube calibrated in cfh. indicates the rate of flow. The assembly for helium will measure flows to 175 cfh. The unit for argon rates to 60 cfh. Factory setting on the regulator delivers argon at 20 lb. per square inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1267 If you write the maker

PAGE FENCE *Since 1883*

• AMERICA'S FIRST WIRE FENCE •

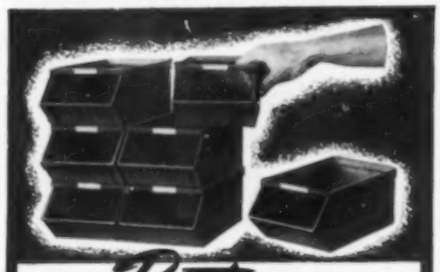


Defense against hazards which could hinder or stop production is a major function of Page Chain Link Fence, guardian of persons and property for more than 60 years. Consult the skilled Page Fence erecting firm near you, whose name we will send with fence data on request. Cost estimates, no obligation. For information:

Write to PAGE FENCE ASSOCIATION *in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, New York or San Francisco.*

PRODUCT OF PAGE STEEL & WIRE DIVISION OF AMERICAN CHAIN & CABLE COMPANY, INC.

BREVITY—Identify by IEN - 1268 If you write the maker



Parts . . .

★ Where You Want Them . . .

★ When You Want Them

You'll save time, space and labor handling parts and material when you use these patented STACKBINS. STACKBINS keep parts instantly accessible—eliminate waste hand motions—stack compactly to form units of exactly the right shape and capacity—make order filling or assembly work faster, easier, more efficient. Heavy steel, all-welded construction. Sizes from 2 1/2" x 6" x 3 1/4" to 18" x 24" x 11". Prices from $.65 to $2.75.

Manufactured and sold in Canada exclusively by Wickwire-Stackbin, Ltd., Ottawa

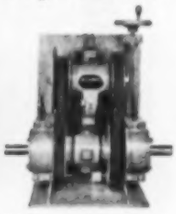
Write Stackbin Corp., 1077 Main Street, Pawtucket, R. I.

STACKBIN SYSTEM
"Stacked and Still Accessible"

BREVITY—Identify by IEN - 1269 If you write the maker

Something New in Instantaneous, Step-Less Speed Control

2 NARROW BELTS... INSTEAD OF 1 WIDE BELT
give smoothest operation... highest ratios in smallest space... longest belt life



The tandem belt design is a feature of WORTHINGTON ALLSPEED DRIVES

Here's a new, enlarged line of instantaneous step-less variable speed drives . . . with important exclusives you'll want to investigate for your machinery.

Worthington ALLSPEED DRIVES are now built in six sizes—from 1 to 15 hp—around the tandem-belt design which gives a *greater range* of speed variation and greatly reduces belt replacement.

Write for Bulletin AS-1600-B3 and AS-1600-B4, Worthington Pump and Machinery Corporation, Worthington ALLSPEED DRIVE Division, Holyoke, Mass.

WORTHINGTON

BREVITY—Identify by IEN - 1270 If you write the maker

STOP DUSTS

. . . from Any Dust Source

IMMEDIATELY . . . WITH DUSTKOP

Available from Stock . . . 22 Standard Models Pretested . . . 300 to 10,050 cfm.

for

Surface, Tool, Cutter Grinders; Polishers and Buffers; Abrasive Belts and Discs; Woodworking and Plastic Industry Equipment . . . DUSTKOPS collect almost *all* kinds of industrial dusts.

Ask for Catalog 605-2. Describe dust problem for recommendation by return mail—no obligation.

Aget-Detroit Co., 401 Main St., Ann Arbor, Mich.

That's a Model 1150; takes all the dust from two 18" wheels. Same unit would handle dust from 3 surface grinders.

BREVITY—Identify by IEN - 1271 If you write the maker

Save MONEY and TIME

Specify JOHNSON GENERAL PURPOSE BEARINGS

● Every Johnson GP Bronze Bearing is completely machined . . . ready for installation. These standard stock size bearings are low in unit cost because of large production runs. Many leading manufacturers have standardized on them . . . saving money and time.

Over 850 sizes of Johnson GP (general purpose) Bearings stocked in all industrial centers. Your order will be shipped the day it is received.

Write for New Catalog

Johnson Bronze
SLEEVE BEARING HEADQUARTERS
476 SOUTH MILL STREET • NEW CASTLE, PA.

BREVITY—Identify by IEN - 1272 If you write the maker

engineers at Harris-Seybold chose GAST AIR PUMPS for three OFFSET PRESSES

Before adopting Gast Units, Harris-Seybold engineers put these rotary Air Pumps through their paces! In the factory, and in actual press rooms, careful checks were made on performance, construction, and dependability. And Gast Air Pumps proved their merits!

As a result, they are now standard equipment on 3 Harris-Seybold models, including their 22 x 34 two-color offset press.

Yes, there's a trend to Gast Air Pumps for presses and printing equipment . . . and for scores of other applications where trouble-free performance is vital. Write Gast, describing your original equipment problem. "Air may be your Answer!"

SEND OUT CATALOG (3) SWEET'S FILE

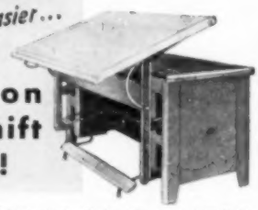
Have you seen Gast Application Ideas booklet, showing 26 product problems and solutions? Sent on request.

Original Equipment Manufacturers for Over 25 Years

GAST ROTARY AIR MOTORS · COMPRESSORS · VACUUM PUMPS
(TO THREE H.P.) (TO 30 LBS.) (TO 28 INCHES)
GAST MANUFACTURING CORP., 119 Hinkley St., Benton Harbor, Mich.

BREVITY—Identify by IEN - 1273 If you write the maker

You'll do better work . . . faster and easier . . . with a **Hamilton Auto-Shift Table!**



HERE'S WHY Regardless of the job, your Auto-Shift gives you the best possible working position. Instant, finger-tip control of height and slope lets you work on any part of the drawing in a relaxed, effortless way.

Standing or sitting—in horizontal or vertical board position—for work or discussion—the flexibility of your Auto-Shift speeds production. You'll like the conveniences of instrument storage and the work-sized reference space, too.

We want you to know all about Hamilton Auto-Shift Tables. It costs nothing, but will save you time and money—just use this handy coupon.

Hamilton Manufacturing Company, Two Rivers 10, Wisconsin
I'd like to know more about Hamilton Auto-Shift Tables.

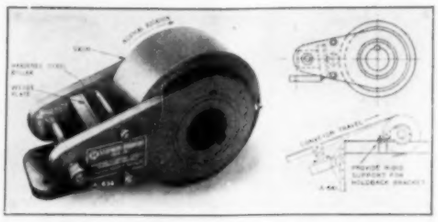
Name _____
Firm _____ Position _____
Address _____
City _____ Zone ____ State _____

Hamilton Manufacturing Company
TWO RIVERS, WISCONSIN

BREVITY—Identify by IEN - 1274 If you write the maker

CONVEYING . . Roller type holdback prevents reverse movement in a conveyor

Source: STEPHENS-ADAMSON MFG. CO.
231 Ridgeway, Aurora, Ill.



New holdback mounts on the rotating shaft at the head end of a bucket elevator or an upward inclined belt conveyor. It carries a roller that rides with the shaft in contact with a small hardened roller floating between it and a stationary wedge plate. Rotation in forward direction is free. Reversal results in wedging the floating roller down against the plate to prevent movement in that direction. Resumption of forward movement is accompanied by immediate freeing of the floating unit without any tendency to bind.

The large roll is made in a range of sizes from 6 to 31 in. in diameter by 2½ to 14 in. in face width. Bore is maximum at 8 in. in the largest assembly. Maximum torque rating is 6,000 to 500,000 inch pounds. Weight 30 to 2,300 pounds.

BREVITY—Identify by IEN - 1275 If you write the maker

SHEARING . . Motor driven machine 12 and 24 in. capacities to 16 gage

Source: O'NEIL-IRWIN MFG. CO.
318 Eighth Ave., Lake City, Minn.

Variable speed drive under the trade name Vari-O-Speed is now available on the company's motor-driven shearing machine previously described IEN-7327-40. The blade speed can be set between 30 and 200 strokes per min. in the new assembly for repeat or for single-stroke non-repeat action. Speed is adjusted by turning a crank at the left-hand side of the housing. The machine is suited for cutting plastics, fiber, mica, leather, rubber, aluminum, steel, brass, stainless steel with capacity to 16 gage in mild steel.

A steel cabinet encloses the drive and is built with a recessed section at the front to permit the operator to sit or stand in comfortable position. Floor space is 18½ by 30 in. on one of the two machines in the line. It is 18½ by 40 in. in the other. Weights are about 450 and 650 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
See the alphabetical list in the index, page 102

BREVITY—Identify by IEN - 1276 If you write the maker

THE HP-600 ARBOR PRESS

For EFFICIENCY and ECONOMY

For light high-speed production and assembly presswork. Provides 800 lbs. of sensitive pressure and sensitive control. Frame, table and table standard are close grained iron castings, well braced and accurately machined. Ram and pinion are special steel. Three slots for arbor work—¼", ½" and ¾" wide. The ideal "Pressure Tool" for model makers, jewelers, instrument makers, radio men, research laboratories, schools, light production work, etc.

Straightening attachment available at $4.95.

$14.00 POSTPAID U.S.A.

Write for further information.

H. D. HERDER TOOL SPECIALTIES
2724 E. MICHIGAN AVE.
KALAMAZOO, MICH.

BREVITY—Identify by IEN - 1277 If you write the maker

Garlock **TAPPING COMPOUND**

For Thread Cutting, Tapping, Reaming and Machining

This all-purpose compound improves production and lowers costs: It reduces amount of torque required. Permits higher speeds with safety on tapping, drilling, reaming, thread cutting and milling operations. Reduces tool breakage. Reduces work spoilage. Easy to apply. Packaged in 1-lb. and 2-lb. cans; also available in larger containers. Write for folder.

THE GARLOCK PACKING CO.
PALMYRA, NEW YORK
In Canada: The Garlock Packing Company of Canada, Ltd., Montreal, Que.

GARLOCK

BREVITY—Identify by IEN - 1278 If you write the maker

Here's why **TRU-LAY PUSH-PULL** is a valuable aid in machine design

TRU-LAY Push-Pull is precision-made. Therefore it . . .

- . . . is positive in action as a steel rod, yet flexible as wire rope
- . . . transmits action over long or short lengths, with few or many bends
- . . . will operate while flexing, with practically no lost motion
- . . . is made in capacities up to 1000 pounds input
- . . . is designed for long life—a machine part—not a flimsy gadget

MAIL THE COUPON BELOW
(to our Detroit Office) for bulletin of information about TRU-LAY Push-Pull.

6-235 General Motors Bldg., Detroit 2
•
1119 Santa Fe Avenue, Los Angeles 21
•
Bridgeport, Conn.

ACCO
AUTOMOTIVE AND AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

Please send me copy of descriptive bulletin DH-87-E-1.

Name _____
Company Name _____
Address _____
City _____ Zone ____ State _____

BREVITY—Identify by IEN - 1280 if you write the maker

AMAZING, NEW, WATERPROOF, GLASS-REINFORCED PAPER

GLAS-KRAFT

PROVIDES POSITIVE ALL-WEATHER PROTECTION

GLAS-KRAFT is one of the strongest, toughest, most flexible, reinforced papers known. It is the most waterproof reinforced paper available. Contains up to 315 ft. of continuous, specially treated glass yarns swirled into each square foot for all-directional reinforcement. Yarns are waterproof-bonded under heat and pressure between two plies of finest specification Kraft.

GLAS-KRAFT IS VERSATILE

- *Wrapping & Packaging*—Textiles, Machinery, Tires, Paper, Steels, Wire Stock, Cement, Chemicals, Furniture, etc.
- *Storage*—Indoor or Outdoor storage of motors, vehicles, machinery, building supplies and equipment . . . As temporary all-weather tarpaulins.
- *Packing & Shipping*—Unitized loading of freight cars . . . As case liners and shrouds for export and domestic shipping.
- *Building & Construction*—As a vapor barrier or side-wall sheathing, protective floor covering, or over subfill.
- *Concrete Curing*—For concrete floors, driveways, sidewalks and roads.

Glas-Kraft is supplied to the U. S. Government in quantity. It meets JAN-P-125 specifications for barrier wrapping material, Types E-1, E-2, E-3.

GET GLAS-KRAFT

Investigate Glas-Kraft when you want an industrial paper to perform where others fail. Available in rolls up to 96 inches in width. Three grades. We also manufacture the revolutionary new Glas-Tape and Glas-Kraft Sealing tape for the corrugated container industry.

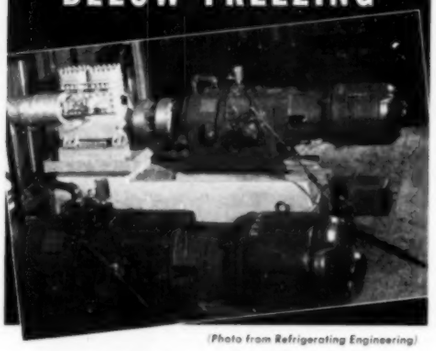
A Better Paper Product By

GLAS-KRAFT, Inc.
LONSDALE, RHODE ISLAND

Write today for sample swatches and prices.

BREVITY—Identify by IEN - 1281 if you write the maker

A STEADY 102° BELOW FREEZING



(Photo from Refrigerating Engineering)

CALLED FOR CONTINUOUSLY VARIABLE SPEEDS AND STABLE OUTPUT TORQUE

OILGEAR *Fluid Power*

SOLVED THIS PROBLEM

The wide range of installations that demonstrate the reliability, scope and ease of control of Oilgear Fluid Power Drives and Transmissions grows daily. A case history from REFRIGERATING ENGINEERING, official journal of the American Society of Refrigerating Engineers, telling how a research laboratory chose Oilgear Transmissions and obtained continuous, dependable performance without delay, is another chapter in that story.

Demands for tests of materials at extreme temperatures called for equipment able to hold testing room temperatures stable at all times—usually at 70° F. below zero. It also had to refrigerate test materials as rapidly as possible. This meant a system of varying compressor speeds automatically—so as to compensate for variations in heat load.

Previous experience had shown that . . . the use of direct current motors, or variable speed drives of the belt-and-pulley type, under automatic control, was not entirely reliable and required considerable servicing.

Then Oilgear Fluid Power Transmissions were adopted. These transmissions provide continuously and automatically variable output speed and maximum output torque at all operating speeds. Nearly two years' experience reveals that temperatures have been maintained within ±½° F. of the desired figure over long periods of time, that no attendant is required except for a few minutes' daily routine inspection, that the Oilgear drives are completely reliable.

Thus the evidence grows that if you are tired of machine or process drives and transmissions that don't stand up, if you want simpler, better, more productive and dependable drives, if you have problems not yet solved, it will pay you to contact Oilgear Fluid Power engineers. THE OILGEAR COMPANY, 1567 W. Pierce St., Milwaukee 4, Wisconsin.

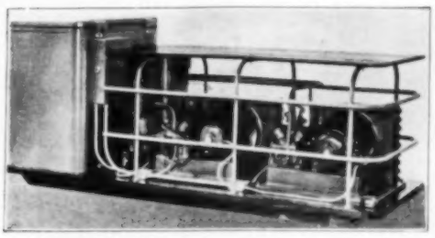
Oilgear Fluid Power

PUMPS, MOTORS, TRANSMISSIONS, CYLINDERS AND VALVES

BREVITY—Identify by IEN - 1283 if you write the maker

REFRIGERATING . . Sub-zero machine to shrink, stabilize, test and store

Source: DEEPFREEZE DISTRIBUTING CORP. 3926-30 Reading Road, Cincinnati 29, Ohio



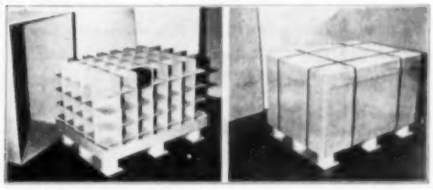
Two compressors, one employing ethane and the other freon, are employed together in this new Model R-120 industrial chilling machine to serve a work chamber measuring 18 by 30 by 33 inches. The first transfers heat from the chamber to a separate tank. The second picks the heat from the tank and disperses it in the air through a condenser. The two together maintain a temperature in the chamber of minus 120 deg. F. The compressors are driven by ¾ and 1-hp. motors. Thermal capacity is 2,000 btu. per hour at the low temperature.

The chamber is made of ⅛-in. steel on the interior. It is insulated with 4 in. of Santocel and is enclosed in a 10-gage steel jacket. The compressor assemblies are standard make. Weight is 1,500 pounds. List price is $4,850. Applications include shrinking metal parts to make fits corresponding to shrink fitting, seasoning or stabilizing of tools and cutters following heat treatment, instrument testing and check on the characteristics at low temperatures of materials such as rubber, plastics, storage of annealed aluminum.

BREVITY—Identify by IEN - 1284 if you write the maker

PACKAGING . . Box type pallet for product handling, strapped assembly

Source: SIGNODE STEEL STRAPPING CO. 2640 N. Western Ave., Chicago 47, Ill.



New combination of the Addison-Semmes expendable pallet and packaging container with the company's strapping equipment is available for packaging and shipping sub-assemblies, fragile products. Container and pallet are made of corrugated paper with paper dividers as required for a given product.

The container is placed on a pallet, is filled and the cover put in position. The package is then completed by steel strapping it as shown in the illustration. Pallet and container are available in a range of sizes for specified use. The assembly illustrated measures 40 by 32 by 30 inches. It weighs about 1,850 lb. when packed. It is secured with ¾-in. .020 steel strapping using the company's Model A-3420 seal-feed machine.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1285 if you write the maker

OPEN and CLOSE DOORS — *Electrically*

Enjoy greater convenience, save time, save heat, reduce dirt, reduce maintenance costs, and help to safeguard health by operating large doors *electrically*. All these benefits result from making doors *easy* to handle, and the cash savings alone can pay the added cost in a short time.

BARBER-COLMAN

ELECTRIC DOOR OPERATORS

Backed by over 20 years specialized experience. Models made for all swinging, sliding, overhead, and steel rolling doors, and for sliding gates. Controls include various types of switches, and automatic units such as electric eye. Write for Bulletin F-1229.

FACTORY-TRAINED SALES AND SERVICE REPRESENTATIVES IN PRINCIPAL CITIES

BARBER-COLMAN COMPANY
114 MILL STREET • ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 1286 if you write the maker

Ahead in 1. DESIGN! 2. PERFORMANCE! 3. VALUE!

A "PACKAGED" UNIT—Complete with built-in hydraulic power unit, controls, and pressure gauge. Capacity, 5 tons. 10" stroke, 7" reach, 16" daylight. Stroke and pressure adjustable. Choice of models for bench or floor mounting.

DOZENS OF USES—Ideal for countless punching, press-assembly, forming, straightening, broaching, and similar operations.

BIG VALUE! LOW COST—Built to "Big Press" standards of quality! Rigid, deflection-resistant frame. Precision-built cylinder and ram.

POPULAR WITH USERS—Works fast with effortless ease. Precision pressure control at operator's finger tip. Easy to set for exact repetitive pressures.

QUICK DELIVERY—Get the presses you need now out of Hannifin's regular volume production. *Write for descriptive literature.*

HANNIFIN CORPORATION
1107 S. Kilbourn Ave., Chicago 24

BREVITY—Identify by IEN - 1287 if you write the maker

make *Stronger* solder joints *Quicker* and *Cheaper!*

IDEAL Thermo-Grip®

Using "Fork" to tight seams to "pin-point" the heat.

STRONGER—resistance heating provides ample concentrated heat—assures full adhesion of solder.

QUICKER—heating begins instantly. No preparation, no pre-heating, no set up.

CHEAPER—no wasted time or current. No chance of melting nearby joints or burning parts. No risky open flame.

Proved by thousands of manufacturers. Sizes for every soldering or brazing job.

"Standard" 1000-Watt Model with "Pliers", "Fork" and "Pencil" attachments also available.

FREE TEST! You Be the Judge

IDEAL INDUSTRIES, Inc.
1108 Park Avenue
Sycamore, Illinois

Please arrange FREE Thermo-Grip demonstration and send catalog data.

NAME _____
COMPANY _____
ADDRESS _____
CITY _____ ZONE ____ STATE ____

BREVITY—Identify by IEN - 1288 if you write the maker

Now! SCHEDULE 5 STAINLESS STEEL PIPE— RIGHT FROM WAREHOUSE STOCK

Economy example: The cost of 100 feet of 1" Stainless Steel Pipe, Schedule 40, will buy *175* feet of the same size, Schedule 5.

Here's welcome news for stainless pipe users—schedule 5, the lightweight, low cost stainless pipe recently adopted by the chemical industry for use with welding fittings, is now immediately available from Frasse warehouse stock.

Possessing the same outside diameter as Schedules 40 and 10, Schedule 5 has a wall thickness considerably lighter than either—is precision welded—and has the fine strip finish that only a welded tube can provide.

This light walled pipe is stocked by Frasse in Types 304 and 316, and provides the lowest running-cost-per-foot pipeline yet available. For further details on this new economical pipe schedule send your IENquiry today—no obligation.

FRASSE *for Stainless Steels*

Sheets • Plates • Strip
Bars • Wire • Tubing • Pipe • Fittings • Valves

Peter A. FRASSE & Co., Inc.
17 Grand Street, New York 13, N. Y.
JERSEY CITY PHILADELPHIA BUFFALO SYRACUSE

BREVITY—Identify by IEN - 1289 If you write the maker

Inexpensive, exacting temperature control combined with continuous indication of the controlled temperature. Control temperature may be changed by turning a thumb screw. Actuates electric heaters, motors or solenoid or motor valves. Catalog No. 1025.

SARCO *Electric*

TEMPERATURE CONTROL

288

SARCO SAVES STEAM

SARCO COMPANY, INC.
Represented in Principal Cities
Empire State Building, New York 1, N. Y.
SARCO CANADA, LTD., TORONTO 5, ONTARIO

IMPROVES PRODUCT QUALITY AND OUTPUT

BREVITY—Identify by IEN - 1290 If you write the maker

The DRY SCRUBBER with the *Self-Sharpening* BRUSH FEATURE

Just flip the switch! That reverses the motion of the brushes of the *Finnell* Dry Scrubber and re-sharpens them automatically. Eliminates the need for frequent changing of brushes by hand in order to maintain a good cutting edge. This heavy duty *Finnell* cleans grease-caked floors in about *one-tenth* the man-hour time required when hand-spudding, and is far more thorough. Floating brush rings enable the two powerful scarifying brushes to get into indentations and grooves that rigid coupling brushes pass over and miss. The machine is adaptable to wet scrubbing, steel-wooling, waxing, and polishing. For free floor survey, consultation, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 2602 East Street, Elkhart, Indiana.

FINNELL SYSTEM, INC.
Pioneers and Specialists in
FLOOR-MAINTENANCE EQUIPMENT AND SUPPLIES
BRANCHES IN ALL PRINCIPAL CITIES

BREVITY—Identify by IEN - 1291 If you write the maker

YOUR GEARS...

... produced

EFFICIENTLY, ECONOMICALLY

● At Fairfield, YOUR GEARS are in the hands of specialists equipped with every modern facility for producing fine gears EFFICIENTLY, ECONOMICALLY. We believe it will pay you, as it has others, to become acquainted with the service Fairfield is rendering to manufacturers in virtually every branch of the machinery building industry. Ask for a copy of interesting, illustrated descriptive brochure.

FAIRFIELD MANUFACTURING COMPANY
315 S. Earl Avenue Lafayette, Indiana

FAIRFIELD for FINE GEARS

BREVITY—Identify by IEN - 1292 If you write the maker

CLAMP . . Toggle plunger design for jigs, fixtures, rates to 4 ton

Source: DETROIT STAMPING CO.
342 Midland Ave., Detroit 3, Mich.

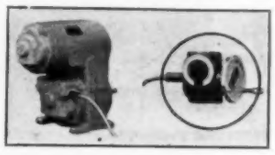
Closing this new No. 650 toggle clamp moves an adjustable plunger forward to grip work in a jig or fixture on which the clamp is rigidly mounted. The plunger travels through a 3-in. movement. Its end is drilled and threaded for a ⅝-in. adjustment bolt. The base and plunger housing are made in one piece of heat-treated alloy steel. The lever handle is the same material. Castings are finished for rust resistance and to provide a slip proof grip.

A lubricator pad on the housing prevents the plunger from sticking. Overall dimensions are 11¼ by 3 by 4½ inches. Weight is about 5½ pounds.

BREVITY—Identify by IEN - 1293 If you write the maker

DRIVE . . Remote adjusters for variable speed drive, to 25 hp.

Source: STERLING ELECTRIC MOTORS INC.
5399-03 Telegraph Road, Los Angeles 22, Calif.



Speed settings can be made from a remote location by flexible shaft, rod and universal joints, gearing, or chain and sprocket with the company's new manually-operated attachment for its Speed-Trol variable-speed motor drive. The attachment can be applied to assemblies now in the field. It is available for any of the standard units in sizes from ½ to 25 hp., with speed variations between 2 and 4 to 1, in a range of speeds between 2,000 and 26 rpm.

BREVITY—Identify by IEN - 1294 If you write the maker

VIBRATING . . Pneumatic unit promotes flow in bins, hoppers, chutes

Source: SPO INC.
6452 Grand Division Ave., Cleveland 5, Ohio

Series 79 has been added to the company's line of vibrators, previously described IEN-10663-50. The units are available in eight sizes with 2 and 2½ in. piston diameters, in long and short stroke assemblies. All are threaded for ¼-in. hose connection. Bodies are semi-steel. The 1-in. tie bolts are made of alloy steel.

A quick acting hopper-gate valve can be specified so the vibrator will operate only when the gate is open.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1295 If you write the maker

Better on "1001" Pumping Duties

Capacities to 150 G.P.M. Heads to 500 Ft.

WE STOCK APCOS IN STAINLESS STEEL

APCO Two-Stage Turbine Type Pump for High Pressure Service

Apco—the pump with but one moving part, the impeller — is famous for long-lived, efficient performance on small capacity, high head duties. Available in Single Stage, Two Stage and 4-Stage Tandem for high pressures — and Water Jacketed for high temperature and highly volatile liquids.

Write for Bulletins 111, 111-A, 111-WJ

DISTRIBUTORS IN PRINCIPAL CITIES

AURORA Always PUMPS — **AURORA PUMP COMPANY**
52 LOUCKS STREET, AURORA, ILLINOIS

BREVITY—Identify by IEN - 1296 If you write the maker

Why So Many Products Are Handled by EXACT WEIGHT . . .

Thousands upon thousands of products go across EXACT WEIGHT Scales today. Why? The facts are that every scale we build fits the operation as to type of product . . . planned production line layout . . . weight capacity of the product handled . . . tolerance, over and underweight . . . speed of operation, whether the work is done by hand, semi-automatic or fully automatic weighing . . . working conditions under which the product is handled. This has given us countless experiences in many industries and in many, many products. The result has been that old users buy this sound equipment again and again . . . new users are added daily. Both have found that EXACT WEIGHT Scales generally do their particular task faster, with less waste and at less cost than any other like equipment. Write us about your handling problem.

EXACT WEIGHT SCALES
Industrial Precision

THE EXACT WEIGHT SCALE COMPANY
932 W. Fifth Avenue, Columbus 8, Ohio
2920 Bloor St., W., Toronto 18, Canada

BREVITY—Identify by IEN - 1297 If you write the maker

reduce deadweight ...increase payloads WITH **J&L**

J&L STEEL

OTISCOLOY

HI-TENSILE STEEL

Reduce the weight of structures as much as 35% with J&L Otiscoloy—without the loss of strength.

J&L OTISCOLOY:—

- √ **Has twice the yield strength of mild steel**
- √ **Has greater fatigue resistance than mild steel**
- √ **Is resistant to abrasion**
- √ **Has atmospheric corrosion resistance 6 times better than carbon steel**

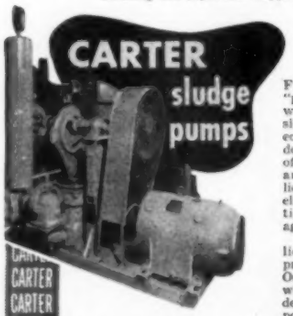
Otiscoloy can be formed hot or cold, welded, forged, flame-cut and otherwise worked by standard methods. Here is a modern steel that is worth your investigation. For further information about Otiscoloy, write for your copy of "Otiscoloy—High-Tensile Steel."

JONES & LAUGHLIN STEEL CORPORATION
455 Jones & Laughlin Building, Pittsburgh 19, Pennsylvania

BREVITY—Identify by IEN - 1298 If you write the maker

Saving more $$$ in oil refineries

Refinery engineers report dependable performance—day after day—on important cost-cutting reclamation processes . . .
"transfer of bottom sediments in gravity-type oil-water separators to elevated decanting tanks"—
"settled oil solids from sludge lagoons"—
"cleaning out separator hoppers"—



For processing of "problem" liquids, you will find the Carter sludge pump an actual economy! Specifically designed for handling of solid-laden, viscous and mildly corrosive liquids . . . practically eliminating emulsification, coagulation and agitation.

If you handle similar liquids—and have a problem . . . call us in. Our engineering staff will be glad to render a detailed, analytical report—at no obligation!

CARTER CARTER CARTER CARTER CARTER

Our latest technical bulletin, No. 5002, is almost ready for press. Gives complete data on sludge pumps—and their application to your problems. May we reserve a copy for you? Write today—on your company letterhead. 195 Atlantic St.

R. B. CARTER SALES INC.
Hackensack, New Jersey

BREVITY—Identify by IEN - 1299 If you write the maker

Bendix-Friez PRESENTS THE Illuminometer

INDUSTRY'S NEW TOOL FOR MEASURING DAYLIGHT ILLUMINATION

The Bendix-Friez Illuminometer is ideal as an aid to correct light-load prognostication through correlation with weather data and other known system factors. Based on U.S. Weather Bureau designs, this new instrument provides continuous recordings of daylight intensity in hundreds of foot-candles. An internal filter neutralizes heat ray effects and means are provided within the unit for calibrating the sensing element against U. S. Government standards. The Illuminometer is built and backed by Bendix-Friez, world's largest manufacturer of fine weather instruments.

Write: FRIEZ INSTRUMENT DIVISION of
1352 Taylor Avenue • Baltimore, Maryland
Export Sales: Bendix International Division, 72 Fifth Avenue, New York 11, N. Y.

BREVITY—Identify by IEN - 1300 If you write the maker

LIKE AN ATOM-IC EXPLOSION

Just ONE 1/32" pin-hole size faucet LEAK MUSHROOMS into ATOMIC WASTE of approximately 76,000 gallons of water yearly—COSTING: $10.13 @ $1 per M cubic feet

If a hot water faucet, then actual FUEL WASTED heating 76,000 gallons costs approximately:

$27.65 if coal (7,900 lbs.)
$38.00 if oil (633 gals.)
$50.63 if gas (67,500 cu. ft.)

STOP this needless WASTE during today's MATERIAL and MANPOWER shortages with "SEXAUER" "EASY-TITES" that outwear ordinary faucet washers 6-to-1, thus SAVING labor on 5 REPEAT repairs, PLUS water and fuel, while prolonging the life of SCARCE fixtures.

PAT'D. **"EASY-TITE"**

Faucet washers

...a modern laboratory triumph, are compounded from du PONT NEOPRENE instead of rubber—to withstand DESTRUCTIVE HEAT common in present-day super-heating water systems—that formerly broke down washer's structure (tested to withstand 300°F.)

Built like a tire with fabric re-inforcement

they resist the grinding, closing squeeze that SPLIT and MUSH ordinary washers out of shape...causing LEAKS.

Through combining NEOPRENE and FABRIC RE-INFORCEMENT they OUTWEAR ordinary washers 6-to-1 on hot or cold TAPS—thus you slash water, fuel and labor costs.

THE NEW 'SEXAUER' CATALOG, Edition F, just out pictures over 2500 TRIPLE-WEAR plumbing REPAIR parts and Pat'd. Precision Tools. It's today's accepted buying guide for discriminating purchasing and maintenance personnel among thousands of top PLANTS, INSTITUTIONS and GOVERNMENT AGENCIES that rely on SEXAUER repair materials. Send for your copy today!

Then too, there's a SEXAUER TECHNICIAN within quick call from coast-to-coast, who offers a special SURVEY service that sets up a schedule of the exact replacement parts required for your particular plumbing fixture regardless of make or age and *without obligation.*

A postcard will bring him and your NEW Catalog F promptly.
J. A. SEXAUER MFG. CO., INC., Dept. K-21
2503-05 Third Avenue, New York 51.

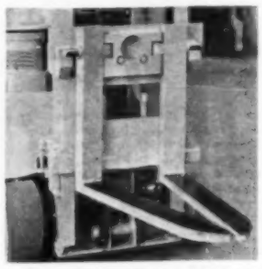
SEXAUER
WORLD'S LEADING SPECIALISTS IN PLUMBING AND HEATING REPAIR PARTS

as advertised in THE SATURDAY EVENING POST

BREVITY—Identify by IEN - 1302 If you write the maker

TRUCK . . Attachment forks are adjustable horizontally on pivots

Source: ELWELL-PARKER ELECTRIC CO.
4060 St. Clair Ave., Cleveland 14, Ohio



Hinge pins in the elevating plate for this new adjustable-fork attachment engage lugs on the inside faces of the two forks. Horizontal pins in the outside faces of the forks ride shoulder lugs on the plate. The arrangement permits toeing one or both of the forks inward horizontally to permit maneuvering under a load that cannot be picked up from straight ahead in standard manner.

The attachment is available to specification. Its parts are made of alloy steel and are sized for capacity loading of the truck on which application is to be made.

BREVITY—Identify by IEN - 1303 If you write the maker

PLYWOOD . . Plastic coated panel presents flat weatherproof surface

Source: AETNA PLYWOOD & VENEER CO.
1750 North Elston Ave., Chicago 22, Ill.

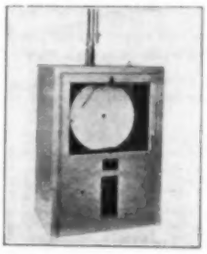
Sample and data mailed on request

Welchboard trade names new plywood panel that has been covered by fusing one face with $\frac{1}{32}$-in. of plastic. Both sides of the panel are covered with one coat of paint primer ready to receive a finish coating. Two sizes are 4 by 8 ft. and 4 by 12 feet. Thickness is ⅝ inch. Applications include building siding, floors, doors, table tops, shower stalls.

BREVITY—Identify by IEN - 1304 If you write the maker

METER . . Gas gravitometer reads specific gravity in gases

Source: AMERICAN RECORDING CHART CO.
3111 E. 11th St., Los Angeles 23, Calif.



Stainless steel is employed in all of the parts of this new Areco meter for measurement of specific gravity in gases. Two standard ranges are available employing 75 and 150-cm. columns. Range for the shorter of the two columns is 0 to 1.0, .5 to 1.5, or 1.0 to 2.0. Range in the unit with the 150-cm. column is .5 to 1.0, .7 to 1.2, and 1.0 to 1.5.

Weights can be supplied to raise or lower the readings where periodic change of the specific gravity range is required. The company's standard gravitometer, rather than this new one, is available for use with non-corrosive gases.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1305 If you write the maker

ADD COMFORT . . . SPEED PRODUCTION with Aerovent FAN

FANS

MAN COOLING

Keep your employees cool for more efficient work. Aerovent "Macheta" airfoil fans are efficient and economical.

Certified Ratings PFMA

Model 39 Matroneiv — 2, 4 or 6 blade Sizes 24" to 48"
Other Models: Direct Connected, Extended Shaft, Duct Type, Belt Driven, Pulley Drive. Sizes 12" to 144".

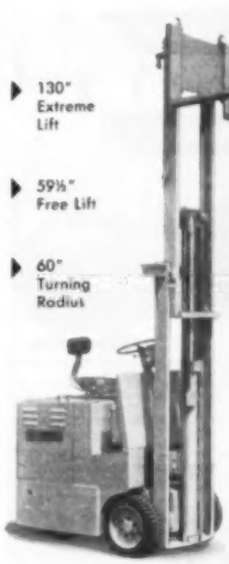
WRITE TODAY FOR ENGINEERING BULLETIN

AEROVENT FAN CO., Inc.
Ash & Brown Streets, Piqua, Ohio
Competent Sales Engineers in Principal Cities

BREVITY—Identify by IEN - 1306 If you write the maker

NEW Mercury JEEP

MODEL 230
2000 Lb. Capacity
Tilting—Tiering



- 130" Extreme Lift
- 59½" Free Lift
- 60" Turning Radius

The most versatile fork truck of 2000 lb. rating. 130" lift with ample stability...60" turning radius *plus* inclined automotive steering...foot pedal acceleration...convenient controls and many other design advancements. For complete details request Bulletin 230.

MERCURY MANUFACTURING COMPANY
4132 S. Halsted Street • Chicago 9, Illinois

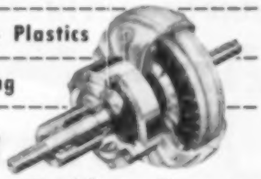
BREVITY—Identify by IEN - 1307 If you write the maker

SPRACO NOZZLES

Write for NOZZLE CATALOG *to*
SPRAY ENGINEERING CO.
110 CENTRAL STREET • SOMERVILLE 45, MASS.

BREVITY—Identify by IEN - 1308 If you write the maker

Textiles • Printing • Paper-Making •
Wire-Making • Plastics
Chemical Mixing



Solve Your Winding Problems Forever

The revolutionary new Twin Disc HYDRO-WYND combines a hydraulic coupling with a planetary gearset to compensate for axle speed variations in winding operations. This unit maintains a *predetermined lineal speed and tension,* constantly and automatically, *throughout the entire winding cycle* with no manual or other adjustments.

All jerkiness is eliminated in the winding cycle. The HYDRO-WYND permits the prime mover to accelerate to the right amount of working torque. As axle torque requirements vary, the planetary gearset and the hydraulic coupling react against each other to produce an output torque which matches predetermined requirements for constant tension and constant lineal speed.

Available for a wide variety of tension and speed requirements on all types of jobs up to 7.5 hp. Write today for complete details—and solve your winding problems forever.

Clutches & Hydraulic Drives TWIN DISC

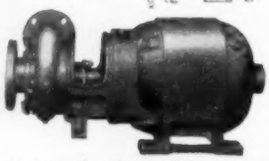
TWIN DISC CLUTCH COMPANY, Racine, Wisconsin
BRANCHES: CLEVELAND • DALLAS • DETROIT • LOS ANGELES • NEWARK • NEW ORLEANS • SEATTLE • TULSA

BREVITY—Identify by IEN - 1309 If you write the maker

FOR A LOT OF PUMP

IN A SMALL PACKAGE

GOULD'S "Close-Cupld"



This efficient, advanced design pump gives the operating man many advantages that eliminate liquid transfer problems.

The pump and motor are a compact unit. The single shaft maintains perfect alignment and the unit is vibration free. You don't need a bedplate.

All you do is set the "Close-Cupld" in place, connect it up and turn on the current.

Sizes and Capacities:

We make the "Close-Cupld" in 17 sizes with capacities up to 2000 G.P.M., heads up to 400 ft. depending on capacities.

Send for a free copy of Bulletin 701.1 today. It gives you complete data on Goulds "Close-Cupld" pumps.

Goulds PUMPS INC. Seneca Falls New York

BREVITY—Identify by IEN - 1310 If you write the maker

SURPRISING SAVINGS

Reported by Users of STANDARD PNEUMATIC TUBE SYSTEMS

Safe — swift delivery by "AIR" of messages . . . money . . . merchandise!

Savings as high as $10,000 in 9 months' time are reported by users of Standard Pneumatic Tube Systems — filling orders, moving merchandise, money, messages, records, between departments. Reduce messenger and telephone service. Can be installed for a wide range of needs in stores, warehouses, manufacturing plants, offices. Write for Bulletin No. 11 and complete information — address Dept. IEN-251.

STANDARD CONVEYOR CO.
North St. Paul 9, Minn.

Write for Bulletin No. 11 — Standard Pneumatic Tube Systems. Address Dept. IEN-251

Standard GRAVITY & POWER CONVEYORS

BREVITY—Identify by IEN - 1311 If you write the maker

BOOST PRODUCTION with SINGLE-ACTING Air-Clamps!

Pneumatic Cylinders

Bore	STROKES Horizontal	Vertical
1"	⅝"	⅝"
2¼"	1"-2"-3"	1"-2"
3"		½"-2"
4"	2"-2½"	2"
5"	3"	3"
6"	3"	2"

NEW CATALOG READY! Complete line of simple, adaptable, compact spring-return air cylinders. Cut costs and speed up production the modern, Air Power way. Write today.

MEAD SPECIALTIES COMPANY
4114 NO. KNOX AVE., DEPT. EA-21, CHICAGO 41, ILL.

NEWS NOTES

Reviews and announcements to keep you informed on sources of special assistance for your daily problems. Subjects include unusually helpful manufacturers' literature, textbooks of industrial interest, slide films and motion pictures on training or product description, unusual applications of existing equipment, formation of new service organizations, new processes, expositions, conventions. Copies of printed material and films are available. Any limiting conditions are named.

BREVITY—Identify by IEN - 1312 If you write the maker

ALLOYS . . Machining instructions for copper and its alloys in 32-page booklet

American Brass Co.
696-700 S. Main St., Waterbury 20, Conn.

Cutting-tool design is emphasized in Third Edition of the company's useful-information booklet, "Machining Copper and Copper-Base Alloys." Copyright date is 1948. Drawings illustrate tool rakes and clearances for turning, parting, forming, drilling, reaming, tapping, threading, milling. Recommended speeds and feeds are given for each of the operations. There is a section on lubricants and coolants and another on physical properties of the company's metals.

BREVITY—Identify by IEN - 1313 If you write the maker

ALLOYS . . For high temperature service described in detail by 96-page technical data book

Haynes Stellite Division
723-27 S. Lindsay St., Kokomo, Ind.

Technical data on ten alloys are given in new book, "Haynes Alloys for High Temperature Service." Seven are cobalt base, two are nickel base, one is iron base. Some are cast, some are wrought. Tables and graphs present information on composition, physical and mechanical properties along with notes on recommended uses. Photomicrographs illustrate other information on age hardening. There is a section on fabrication procedures for wrought alloys. Mechanical properties of the alloys are compared in nine pages of graphs.

BREVITY—Identify by IEN - 1314 If you write the maker

BEARINGS . . Useful information on selection in new catalog of ball bearings for general use

New Departure Division
267-71 N. Main, Bristol, Conn.

Load ratings and what they mean are described at the start of 140-page 20th Edition of the company's Handbook, Volume 1. Examples and charts follow on bearing selection, together with service factors. Tables list load ratings and dimensions for standard ball bearings in 12 basic groups that are summarized by a picture index inside the front cover. Accompanying the catalog information are suggestions on design of equipment employing the bearings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1315 If you write the maker

Prevent Overloading HOISTS & CRANES

with DILLON DYNA-SWITCH

When load limit is exceeded, Dyna-Switch trips a sensitive micro-switch which may be connected to a warning bell or light. If Dyna-Switch is connected into the motor, the overload automatically cuts motor out, and load must be returned to floor and surplus weight removed before pickup can be completed.

Top working range is 10,000 lbs. Set at factory for any desired cutout point, but can also be re-set in the field if working conditions change. Low in cost—always on guard. Write or wire today for illustrated bulletin.

W. C. DILLON & CO., INC.
1421 K SO. CIRCLE AVENUE, FOREST PARK, ILLINOIS

BREVITY—Identify by IEN - 1316 If you write the maker

TEMPER OR TASGON

Tasgon saves time, money and temper. The quickest, most penetrating rust solvent on the market, Tasgon cuts through hardened paint, gummed-up grease, rust almost instantly. Quickly frees frozen nuts, bolts, couplings. Cleans and salvages old rusty equipment.

Free Sample Write today for your free can of Tasgon and complete information. Once you've used it, you'll never be without it.

Samuel Cabot, Inc.
233 Oliver Bldg. Boston 9, Mass.

BREVITY—Identify by IEN - 1317 If you write the maker

Extra fast, easy pipe cutting with RIDGID

● It rolls right through any pipe with least effort, quick almost burrless cuts—factory tested, tracks perfectly. Special thin-blade cutter wheel for extra fast cutting—or heavy-duty wheel for extra long service. Guaranteed warp-proof special malleable housing. Five models to 6" pipe; 4-wheel short-handle models for speedy cutting in tight places. For tops in clean, easy pipe cutting, buy RIDGID Cutters at your Supply House.

RIDGID
Work-Saver Pipe Tools
THE RIDGE TOOL CO. • ELYRIA, OHIO

BREVITY—Identify by IEN - 1319 if you write the maker

CHUCKING IRREGULAR PARTS?

Production time and money can be saved in making chuck jaws and nests for dial feeding stations for holding irregular shaped pieces by the Cerromatrix Method.

Low temperature melting Cerromatrix can be cast against metal parts, rubber, wood and most molded plastics without danger of burning or warping.

Cerromatrix can be poured at 290° F., has a Brinell hardness of 19 and expands slightly after casting. These features make it ideal for split jaw chucks and nesting jigs. Can be reused indefinitely.

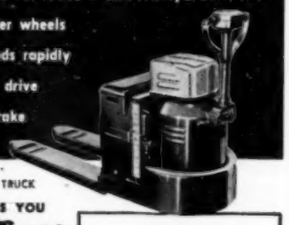
Write for Bulletin B5—How To Make Chuck Jaws.

CERRO de PASCO
COPPER CORPORATION

Dept. 6, 40 Wall Street New York 5, N. Y.

BREVITY—Identify by IEN - 1320 if you write the maker

fast, agile, highly maneuverable • touch-button control
compact, rugged construction • outstanding design
transports 4,000-lb. loads • smooth hydraulic lift
dual rubber trailer wheels
raises heavy loads rapidly
powerful electric drive
positive-action brake



MODEL "W"
ELECTRIC PALLET TRUCK

TOWMOTOR GIVES YOU
more features

Packed with cost-cutting features for the fast, safe, easy handling of loads up to two tons, the Towmotor Model "W" Electric Pallet Truck has already proved itself in every type of manufacturing. Learn how to cut your handling costs. Write for the comprehensive new free booklet, "AN ENGINEERING ACHIEVEMENT." Towmotor Corporation, Division 26, 1226 E. 152nd St., Cleveland 10, Ohio.

See the
TOWMOTOR EXHIBIT
BOOTHS 322-323
1951 MATERIALS HANDLING EXPOSITION
International Amphitheatre, Chicago April 30—May 4

TOWMOTOR
THE ONE MAN GANG

FORK LIFT TRUCKS and TRACTORS

RECEIVING • PROCESSING • STORAGE • DISTRIBUTION

BREVITY—Identify by IEN - 1321 if you write the maker

THIS IS IT! THE SEAL WE'VE BEEN LOOKING FOR!

YES! FABCO is the PREMOLDED CAULKING that fits all standard steel or aluminum roofing and siding sheets.

FABCO eliminates costly hand caulking by closing and sealing all openings between corrugated sheets and flat surfaces, such as curbing, flashing at corners, eaves, ridge roll or cap, gutters, gables and around doors and windows.

FABCO provides firm nailing and bolting support, prevents flattening and deforming of sheets.

FABCO prevents electrolytic corrosion by insulating aluminum sheets from steel construction members.

FABCO Closure Strips are premolded of naturally weatherproof rubber composition, neoprene composition or asphalt compound. They can be worked, cut punched or drilled with ordinary tools and are easily and quickly installed as sheets are laid.

For complete specifications and descriptive drawings of applications in most corrugated construction assemblies:

Write for Bulletin 501-B TODAY!

FABRICATED PRODUCTS CO.
PITTSBURGH 16, PA.

NEWS NOTES—Continued

"Booklet of design suggestions on aluminum"

BREVITY—Identify by IEN - 1322 if you write the maker

ADHESIVES . . Data on Government procurement of wood, plastics, paper products in 8-page bulletin

Borden Co.
350 Madison Ave., Room 430, New York 17, N. Y.

Service Bulletin 82 of the company's Chemical Division presents a summary of military specifications on plywood, paperboard and plastics together with the adhesives required to comply. Military purchasing offices are listed with addresses so you can write direct to the supply officers.

BREVITY—Identify by IEN - 1323 if you write the maker

ALUMINUM . . Suggestions on design in 138-page booklet on aluminum extrusions

Reynolds Metals Co.
2502 S. 3rd St., Louisville 1, Ky.

Revised Edition of "Designing with Aluminum Extrusions" will be sent without charge only on direct letterhead request. The booklet describes use of extruded aluminum sections to make products with a minimum of operations, shape design from a manufacturing standpoint, structural design considerations, joint design, dimensional tolerances, choice of alloy and temper, fabricating properties, cost factors. There are about 140 illustrations in the design section alone out of a total of nearly 400 throughout the booklet.

NOTE—Inquiries will not be forwarded for this booklet. Please address your request direct, using your letterhead.

BREVITY—Identify by IEN - 1324 if you write the maker

BEARINGS . . 101 selected references in new bibliography on non-metallic bearings

Engineering Societies Library
29 W. 39th St., New York 18, N. Y.

References to the literature of the past 12 years are condensed into new "ESL Bibliography No. 6" on non-metallic bearings. The publication consists of 15 typewritten sheets, lists at 82, covers manufacture, design, properties, wear, lubrication, performance, testing, applications.

BREVITY—Identify by IEN - 1325 if you write the maker

CASTINGS . . Design considerations on steel castings included in reference book

Steel Founders' Society of America
920 Midland Bldg., Cleveland 15, Ohio

Chapter Four in new 1950 edition of the "Steel Castings Handbook" is on steel casting design. Its 33 pages deal with fundamental points, defects that can be eliminated, general rules, drawings and suggestions on typical sections, design for composite fabrications.

The other chapters in the 522-page book, list price $4, are on manufacture of steel castings, heat treatment, properties of commercial casting steels, casting types, applications, recommendations to purchasers, National Steel Casting Specifications with ASTM designations.

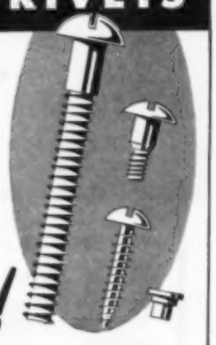
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1326 if you write the maker

Beaver-Bilt
SCREWS
STUDS • RIVETS

Standard and Special Types Made for Your Particular Requirements

COLD HEADING PROCESS



Prompt Delivery!

URGENT ORDERS GIVEN SPECIAL ATTENTION
WIRE OR WRITE US ABOUT YOUR NEEDS

Beaver Industries
METAL FASTENER DIVISION
1500 WEST ADAMS STREET, CHICAGO 7, ILL

BREVITY—Identify by IEN - 1327 if you write the maker

The NEW Udylite
LUCITE PLATING CYLINDER

This cylinder is made of heat resistant Lucite—which offers greater abrasion resistance than any other material in use. And the shell is *mortised* and *cemented* into the cylinder heads—with door openings machined to a very close tolerance, providing perfect fit. Door clamps are designed to give maximum support to the door panel yet open easily and freely.

Oversized superstructure with "Deep-Dip" design allows the cylinder to hang deep in the solution. This Lucite cylinder can be operated through the complete cycle—either acid or alkaline.

Call in your Udylite Technical Man for full information concerning the Udylite Lucite Plating Cylinder or write direct to *The Udylite Corporation, Detroit 11, Mich.*

BREVITY—Identify by IEN - 1328 if you write the maker

KIPP Air Grinders

• FASTER SPEEDS
• BETTER RESULTS
• LOW PRICES

MODEL JA
80,000 R.P.M.
Weight 12 ounces; length 6¾ inches; chuck size ⅛ inch. Wheel guard removed for better illustration.

$42 IN U.S.A.

THEY GRIND--NOT JUST RUB!

The RPM's stay up while grinding . . . not only when the grinder runs idle.

It is an established fact that surface speeds must stay up to approximately a mile a minute if you want to grind . . . not just rub. Every mechanic knows this, but an inexperienced buyer may order tools that maintain proper grinding speeds only when running idle. The speed of Kipp air grinders drops but slightly when put to work. That means better work . . . longer wheel life.

MADISON-KIPP CORP.
224 Waubesa St., Madison, Wis., U.S.A.

Write for KIPP Air Tool Catalog AT 3006

BREVITY—Identify by IEN - 1329 if you write the maker

MANY INDUSTRIAL ROLL PROBLEMS are solved by using

SHAF-TITE* ROLLS

Many patented constructions provide strongest possible shaft setting. Your choice of many different types and materials—wood, rubber, iron, brass, stainless steel plastic, etc. Whatever your roll problem, put it up to Rodney Hunt.

SEND FOR NEW CATALOG NO. 48
Most complete publication of its kind

Industrial Roll Division
RODNEY HUNT MACHINE CO.
173 Main Street, Orange, Mass.

*Reg. U. S. Pat. Off.

BREVITY—Identify by IEN - 1330 if you write the maker

Carter

CUTS COSTS WAY DOWN!

NEW JIFFY TIRE EASY TO APPLY!

Jiffy Tires go on in less than 5 minutes. No cement, glue, rims, bolts or special tools needed. And, Jiffy Tires are made in sizes to fit any bandsaw wheel. Molded from tread-rubber with steel backbone. Carter products universally accepted as standard equipment by leading bandsaw manufacturers.

Write—

For free illustrated folder!

CARTER PRODUCTS COMPANY INC.

57 Mount Vernon, N. W. • Grand Rapids 4, Mich.

BREVITY—Identify by IEN - 1331 if you write the maker

Announcing

Centr-A-Power SWITCHBOARDS

custom-built...

pre-engineered...at money-saving prices

Have us send you Bulletin TEB-3 which tells you how Trumbull's new CENTR-A-POWER can give you highest quality switchboard materials and construction at lowest possible cost.

Assembled from standardized interchangeable units and troughs with a minimum of engineering, CENTR-A-POWER provides a compact and flexible "center" for all your switching.

CENTR-A-POWER conveniences include greater capacity troughs—saving floor space; greater cross-section gutters—making wiring easier; quick-clip attachment of switch and breaker units—saving installation time.

Write now for Bulletin TEB-3 on CENTR-A-POWER. THE TRUMBULL ELECTRIC MANUFACTURING COMPANY, Plainville, Conn.

TRUMBULL ELECTRIC

BREVITY—Identify by IEN - 1332 if you write the maker

NEW! Gives you 33⅓% more value for your money!

DELTA MILWAUKEE

BIG 8" DELTA CRESCENT JOINTER

only $340.00 motor extra (Subject to change without notice)

33⅓% more cuts per minute! Cutterhead has 4 knives. Makes 16,400 smoother c.p.m. 1 hp. motor. Belt drive. Cuts 8" wide. 60"-long working surface.

Get complete details! Send for free bulletin Ad-570

DELTA POWER TOOL DIVISION Rockwell Manufacturing Company

6158 E. Vienna Avenue • Milwaukee 1, Wis.

NEWS NOTES—Continued

"Booklet on how to do bending"

BREVITY—Identify by IEN - 1333 if you write the maker

BENDING . . Operating procedures shown for bar, shape, strip, tube in booklet

O'Neil-Irwin Mfg. Co.
318 Eighth Ave. S., Lake City, Minn.

Drawings and condensed operating instructions form the greater portion of new 32-page booklet, "It's Easy to Bend." They cover such operations as eye, circle, scroll, square, spring, tube, channel, angle bends. Machines are reviewed.

BREVITY—Identify by IEN - 1334 if you write the maker

CALENDAR . . Seven sporting scenes illustrate company's new 1951 calendar

Bonney Forge & Tool Works
51 Tilghman St., Allentown, Pa.

Four-color illustrations are feature of 1951 calendar which the company will send you on request while the supply lasts. Size is 8¼ by 12 inches. The pictures are of hunting, fishing and other sporting activities.

BREVITY—Identify by IEN - 1335 if you write the maker

CALENDAR . . And decimal equivalents combined in new wall chart, 22½ by 34 inches

Hyatt Bearings Division
425-29 Middlesex St., Harrison, N. J.

Fractions of an inch and their decimal equivalents occupy the major center portion of new 1951 calendar which the company will send you on request while the supply lasts. The calendar portion occupies two vertical rows, one on each side.

BREVITY—Identify by IEN - 1336 if you write the maker

CAPACITORS . . Book on how to use them for power-factor improvement in industrial plants

John Wiley & Sons Inc.
440 Fourth Ave., New York 16, N. Y.

Four engineers from General Electric Company wrote this new 254-page book, "Capacitors for Industry". The book, list price $4.50, covers power-factor fundamentals, making power-factor studies, application data, capacitor characteristics.

BREVITY—Identify by IEN - 1337 if you write the maker

CONTROLS . . How they are used to regulate combustion shown in data bulletins

Hays Corp.
740-44 E. 8th St., Michigan City, Ind.

"Results" titles series of data bulletins issued at intervals on specific installations of the company's combustion controls. The series covers power generation and process steam equipment. Each bulletin includes a schematic connection diagram, performance details, description. Your name will be added to the list upon request.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1338 if you write the maker

STOP TAKE-UPS and DOWN-TIME with...

Cordan

Leather Belting

LEATHER for Greater Pulley Grip and Durability!
RAYON CORDS eliminate stretch and maintenance.
CORDAN LEATHER BELTS deliver More Power, More Production Longer!
CORDAN LEATHER BELTS hold tension, reduce slippage, practically eliminate take-ups and down-time.

Write TODAY for descriptive, illustrated literature.

ESTABLISHED 1881 S. R. SIKES COMPANY MINNEAPOLIS 15, MINNESOTA

BREVITY—Identify by IEN - 1339 if you write the maker

REEVES VARI-SPEED MOTOR PULLEY

CONVERTS ANY CONSTANT SPEED MOTOR TO A "STEPLESS" VARIABLE SPEED DRIVE!

For Stepless Speed Adjustability Within 4:1 Range. Sizes to 10 Horsepower

1 Mount Your Motor on This REEVES Motor Base. Base includes sliding platform and handwheel for moving motor forward or back.

2 Apply This Disc Assembly to Motor Shaft. Consists of two cone-shaped discs, one sliding laterally, and compression spring.

3 Connect to Driven Machine with REEVES V-Belt. Place V-belt between discs and over pulley on power input of driven machine.

For complete details, send for FREE Catalog 1N11a

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Recognized Leader in the Specialized Field of Speed Control Engineering

BREVITY—Identify by IEN - 1340 if you write the maker

—the perfect WIPE-ON for Stampings, Engravings, etc.

Lacquer-Stik

SO EASY TO USE

Just RUB IN . . . WIPE OFF . . . FINISHED!

Lacquer-Stik is a highly specialized paint, compounded and prepared solely for use as a wipe-on. It is semi-solidified in stick form for quick, convenient use, but soon hardens and becomes permanent. Fill-in will expand and contract with the part and can be subjected to temperatures as high as 500° F. Will not rub off or smear when handled after application.

You'll be delighted with the attractive colors of this time-saving, labor-saving, practical and permanent wipe-on.

At your Supply House—or send 50¢ coin for sample, specifying color.

Our Research Laboratory will study your problem and make recommendations on any parts you submit.

LAKE CHEMICAL CO.

3060 W. Carroll Avenue Chicago 12, Illinois

BREVITY—Identify by IEN - 1341 if you write the maker

WHAT CAN THIS PUMP MEAN TO YOU?

To the sugar refiner it means smooth, non-foaming pumping of even the most viscous syrups and gassy molasses. To the oil refinery operator it means high-efficiency pumping of asphalt, lube oils, greases, emulsions, etc. To the processor of foods and edible oils it means competent handling of everything from chocolate to lard, from fish oil to fig newton paste!

Perhaps this unique *Kinney SD Rotating Plunger Pump* can mean important production and processing advantages to you. Perhaps raw materials, now handled as solids, can be pumped at a saving. Perhaps you require a pump with meter-like accuracy. Whatever your pumping problems, Kinney Engineers are ready to help you find the right pump for your needs.

Kinney LIQUID PUMPS

KINNEY MANUFACTURING CO.

3564 Washington St., Boston 30, Mass.

New York • Chicago • Cleveland
Houston • New Orleans • Philadelphia
Los Angeles • San Francisco • Seattle
and foreign countries.

▼ BREVITY—Identify by IEN - 1342 if you write the maker ▼

Light IN WEIGHT...

Right IN PRICE!

AO R9100 TYPE RESPIRATOR

The low cost of this BUREAU OF MINES APPROVED Respirator has always appealed in dusty operations where a soundly made respirator of simple construction is adequate.

It protects against *pneumoconiosis-producing* and *nuisance dusts* such as aluminum, borax, carbon, cement, charcoal, coke, flour, glass, grain, graphite, gypsum, limestone, pollen and wood. Companion respirator R9100T should be specified for dusts not significantly more toxic than lead, such as barium, cadmium, lead arsenate, manganese and organic dusts—also for protection against DDT and insecticide sprays of similar potency. Your nearest AO Safety Products Representative can supply you.

American Optical
SAFETY PRODUCTS DIVISION

Southbridge, Massachusetts • Branches in Principal Cities

▼ BREVITY—Identify by IEN - 1343 if you write the maker ▼

gives you . . .

- **Better Paint Jobs**
- **Better Electroplating**
- **Better Finishing**
- **Better Products**

Slash finishing costs to rock-bottom in your plant! Amazing Pangborn Hydro-Finish cleans far faster than hand methods, yet holds tolerances to .0001"! Hydro-Finish cannot harm your product's sharp edges or corners, forms a perfect "tooth" for non-peel electroplating, finishing or painting.

Hydro-Finish makes threaded pieces turn easily . . . forms millions of little "oil pockets" in lubricated pieces to prolong product life. Fatigue failure is reduced because Hydro-Finish removes or blends grinding lines, etc!

Hydro-Finish is also valuable in your tool room—cleans production tools and dies in a fraction of the time needed for expensive hand cleaning.

WRITE TODAY for Bulletin 1400-A. Contains full facts on Pangborn Hydro-Finish and Pangbornite Abrasive. For your free copy, address: PANGBORN CORPORATION, 2300 Pangborn Blvd., Hagerstown, Maryland.

Pangborn

BLAST CLEANS CHEAPER with the right equipment for every job

▼ BREVITY—Identify by IEN - 1345 if you write the maker ▼

WRENCHES . . Combination units and open end designs, 1/4 to 1 inch

Source: BONNEY FORGE & TOOL WORKS
51 Tilghman St., Allentown, Pa.

Openings range from 1/4 and 7/16 in. to 11/16 and 1 in. in the company's new line of open-end wrenches. These are available in open stock or in three set selections. The new Streamline combination units of box and open ends are made in a Long Series with openings from 5/16 to 3/4 in. and in a Short Series from 7/16 to 1 inch. All are featured by smooth rounded finish and narrow heads. Single and double-hexagon boxes are included in the combination units. Material is forged steel.

▼ BREVITY—Identify by IEN - 1346 if you write the maker ▼

CLEANING . . Emulsifying liquid to clean and restore old paint brushes

Source: PENETONE CO.
72-76 Hudson Ave., Tenafly, N. J.

Also removes paint from hands and arms

New formula has been developed to improve the company's liquid material Restorex which acts to emulsify the oils holding paint pigments to the bristles in a used paint brush. The action releases the pigments so they can be rinsed away in water. The liquid does not attack the bristles or the rubber brush setting. It emits no fumes or odor, is non-inflammable, non-toxic and evaporates at about the same rate as ordinary water from the cleaned brush.

▼ BREVITY—Identify by IEN - 1347 if you write the maker ▼

DRYING . . Portable electric blower rates 400 cfm., delivers hot or cold

Source: ULLMAN PRODUCTS CORP.
150-54 Prospect Ave., Brooklyn 15, N. Y.

Rocket Dryer designates new electrically-heated stand-mounted blower for operation on 110-volt, 60-cycle ac. The blower can be set for delivery at room temperature or for either of two heat positions at 110 or 130 deg. F., based on 75 deg. F. inlet.

Overall height is adjustable between 41 and 63 in. above the floor. The 2¼ in. nozzle telescopes out from 17 to 26 in. in length from the center line of the stand. The assembly weighs 55½ pounds. Finish is in baked gray hammertone. The motor is a 1/12-hp. unit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—Identify by IEN - 1348 if you write the maker ▼

For Sure Sealing And Long-Life Sealing

Specify

SYNTRON SHAFT SEALS

FOR PUMPS • COMPRESSORS TURBINES • ENGINES • MIXERS MACHINES • PROPELLER SHAFTS ETC.

Provide fully automatic sealing action . . do away with repacking expense.

Standard seals eliminate leakage of air, water, gases, petroleum products, etc., and withstand temperatures from 10°F. to 200°F. and pressures to 250 psi. Special seals for corrosive and abrasive liquids.

EASY TO INSTALL | EASY ON SHAFTS | EASY ON POWER

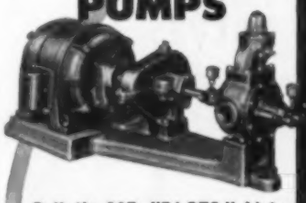
Write for Folder describing the seal with the long, long life.

SYNTRON CO.
410 Lexington Ave. Homer City, Pa.

▼ BREVITY—Identify by IEN - 1349 if you write the maker ▼

▼ BREVITY—Identify by IEN - 1350 if you write the maker ▼

If it's performance you're after . . . . ✓BLACKMER PUMPS



Bulletin 307, "FACTS," Lists Data Vital To Process Plant Pump Engineers

"FACTS" contains design and construction, maintenance, operation and application data for better pump service.

WRITE FOR YOUR COPY

WHEREVER THESE OR SIMILAR LIQUIDS ARE HANDLED

Acids
Alcohols
Asphalt
Beer
Butane
Dyes
Fuel Oil
Gasoline
Glue
Mash
Molasses
Oils
Paints
Rosin
Soaps
Soups
Syrups
Tallow
Tar
Tomatoes
Yeast

BLACKMER PUMP CO.
GRAND RAPIDS, MICHIGAN

▼ BREVITY—Identify by IEN - 1351 if you write the maker ▼

TRIPLE-ACTION EXTINGUISHING EFFICIENCY

1. HIGH VELOCITY WaterFOG
2. STRAIGHT STREAM
3. LOW VELOCITY WaterFOG

ROCKWOOD SG-48 WaterFOG NOZZLE

These three types of discharges from Rockwood SG type WaterFOG Nozzles will quickly control and put out fires in flammable liquids and ordinary combustibles.

They will out-perform any other Fog nozzle operating on either high or low pressures for all-around fire fighting purposes. Rockwood SG type WaterFOG Nozzles are more efficient and will protect firemen from fire, smoke and fumes.

Designed for use in industrial plants, chemical plants, oil refineries, mercantile and public buildings and municipal fire departments.

Approved by Underwriters' Laboratories, Inc. and Factory Mutual Laboratories. Write for bulletin C-501R.

ROCKWOOD SPRINKLER CO.
40 HARLOW STREET WORCESTER 5, MASS.

BREVITY—Identify by IEN - 1352 if you write the maker

Precision plastics in small lots are now available at the lowest possible die mold cost. This new method is primarily for pilot runs in the production of 100 to 5000 small precision plastic moldings for experimental and other purposes where conventional type die molds would be prohibitive.

Present capacity: ¾-ounce size, 2 x 3 x 1"

Your inquiries are invited.

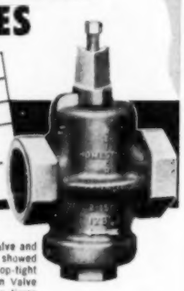
DAYTON ROGERS
Manufacturing Company
MINNEAPOLIS 7, MINNESOTA

BREVITY—Identify by IEN - 1353 if you write the maker

Up to 22 times more operations
WITHOUT RE-LUBRICATING
HOMESTEAD-REISER
Self-Sealed LUBRICATED PLUG
VALVES

TEST RECORD VALVE	NO. OF OPERATIONS without RE-LUBRICATING
VALVE "A"	5
VALVE "B"	33
HOMESTEAD-REISER VALVE	110

Each valve assembled with the manufacturer's recommended lubricant. Test made on 75 lb. air pressure.



This comparative test of a Homestead-Reiser Valve and two other well-known lubricated plug valves showed that the Homestead-Reiser Valve remained drop-tight through twenty-two times more operations than Valve "A" without re-lubricating, and through three times as many operations as Valve "B". That means that Homestead-Reisers require less attention, and give greater economy of lubricant.

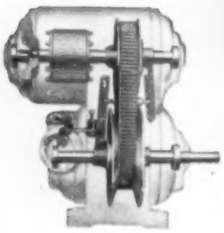
Prove the superiority of Homestead-Reiser Valves to your own satisfaction, by installing a few in your plant, side by side with any other lubricated plug valve. They may be had in both semi-steel and cast-steel, sizes ½" to 12" for steam working pressures to 150 pounds, or oil-water-gas to 200 pounds.

Write for new catalog 39-5, and for prices on your requirements.

HOMESTEAD VALVE MANUFACTURING CO.
"Serving Since 1892"
P. O. BOX 85 CORAOPOLIS, PA.

BREVITY—Identify by IEN - 1354 if you write the maker

power modernization



means perfect speed control

STERLING
SPEED-TROL

OUTSTANDING FEATURES: Infinite speeds — positive speed regulation — fingertip control — large indicator — positive pulleys — no springs — protected — balanced design — streamlined — Herringbone Rotor — through ventilation — shielded ball bearings — versatile mounting — NEMA dimensions — shock absorbing quiet operation — rugged — compact — dependable — long life.

Ask for your copy of pictorial bulletin No. B-62, showing Sterling Electric Power Drives Turning The Wheels of Industry.

STERLING ELECTRIC MOTORS

Plants: New York 51, N. Y.; Los Angeles 22, California; Hamilton, Canada; Santiago, Chile. Offices and distributors in all principal cities.

NEWS NOTES—Continued

"How the magnetic-particle clutch works"

BREVITY—Identify by IEN - 1355 if you write the maker

CYLINDERS . . How to use pneumatic cylinders in production operations described by examples in booklet

Bellows Co.
230 W. Market St., Akron 3, Ohio

Bulletin CL-30 uses illustrated examples to show how the company's pneumatic cylinders can be used in repetitive production operations involving a push, pull or lift. Its 24 pages include production figures and details on "Air Motor" cylinder and valve unit assemblies, pneumatic feeders, vises.

BREVITY—Identify by IEN - 1356 if you write the maker

DIE CASTINGS . . Sound motion picture on the die casting process and its applications

Doehler-Jarvis Corp.
386 Fourth Ave., 19th Floor, New York 16, N. Y.

"The Shortest Way" is title of new 16-mm. film which the company will loan you upon request for group showing. It describes the die-casting process, equipment employed, and shows a variety of applications. It stresses the design features in die-cast parts. Running time is 27 minutes.

BREVITY—Identify by IEN - 1357 if you write the maker

DRIVES . . Flat belt data book contains selection tables on belts and pulleys

American Leather Belting Association
39-43 Park Row, New York 7, N. Y.

"Uni-Pull Drive Manual" is new 40-page book of selection tables on flat leather belt and pulley drive combinations. These tables are arranged so you can pick out the desired combination without calculation. Other tables cover endless belt lengths, motor-base selection, hp. ratings.

BREVITY—Identify by IEN - 1358 if you write the maker

DRIVES . . Data on magnetic-particle clutch in bulletin which shows how it works and gives ratings

Vickers Electric Division
1813-17 Locust St., St. Louis 3, Mo.

Photomicrographs in new 32-page Bulletin 6000 illustrate the action of powdered-iron particles alone and in a magnetic field, the principle on which the company's Magneclutch is based. Drawings show design points, curves are presented on performance ratings and dimensions included.

BREVITY—Identify by IEN - 1359 if you write the maker

ELECTRONIC PRODUCTS . . Tube manual presents design data on rectifier circuits

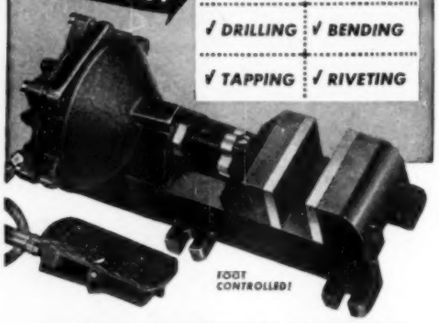
Electrons Inc.
125-29 Sussex Ave., Newark 4, N. J.

New edition of the company's "Engineering Manual" on gaseous-discharge rectifier and control-rectifier tubes describes typical circuits, constants, performance. It contains 18 pages of tube data in addition to 32 pages on application.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1360 if you write the maker

SPEEDY AIR VISE
SPEEDS UP
✓ MILLING ✓ PUNCHING
✓ DRILLING ✓ BENDING
✓ TAPPING ✓ RIVETING



GRIPPING FORCE 15 TIMES AIR LINE PRESSURE

Speedy Air Vise helps you do dozens of operations faster, better, cheaper—by air pressure! Foot control valve opens and shuts vise instantly, leaving *both* hands free to produce *more!* Jaw opens up to 3 inches, holds castings, parts, jigs, etc. Compact and trouble-free.

Complete with Foot Control, Air Hose and Fittings.....only $29.90

Prompt Delivery from Your Supplier or Write Direct

W. R. BROWN CORPORATION • 5730 Armitage Ave. • Chicago 39, Ill.

AIR REGULATORS • AIR FILTERS • AIR GUNS • PORTABLE COMPRESSORS

BREVITY—Identify by IEN - 1361 if you write the maker

How You Save with the NEW Niagara Method of Air Conditioning

Using "HYGROL" Absorbent Liquid

Because it absorbs moisture from the air directly, the new Niagara Controlled Humidity Method uses less, or no, mechanical refrigeration for dehumidifying. You save first costs and installing of heavy machinery. You save space, maintenance expense, power; get easier, more convenient operation.

Using "Hygrol" absorbent liquid gives complete control of temperature and relative humidity. Especially, it is a better way to obtain dry air for drying processes, packaging hygroscopic materials, preventing moisture damage to metals, and obtaining better quality for chemical process and food products—or in obtaining better results in comfort air conditioning at lower refrigeration costs.

Filtered air is dehumidified by passing through a spray of "Hygrol" which removes airborne moisture. This liquid is non-corrosive; it contains no salts or solids to precipitate and cause maintenance troubles. It is continuously re-concentrated at the same rate at which it absorbs moisture, providing always the full capacity of the air conditioner, automatically.

Food Packaging under Controlled Humidity

Units provide a range of capacities from 1000 to 20,000 C. F. M. Multiple unit installations are in use successfully. Records of results are available. For further information, write Niagara Blower Co., Dept. EN, 405 Lexington Ave., New York 17, New York.

BREVITY—Identify by IEN - 1362 if you write the maker

Job time records are VITAL—
CALCULAGRAPH
FIGURES THEM
ACCURATELY, AUTOMATICALLY

COMPUTES—
TOTAL ELAPSED TIME
PRINTS—
STARTING TIME
FINISHING TIME
TOTAL TIME

One CALCULAGRAPH figures and prints cards for entire shop

Complete, accurate records of every job in shops or the largest departments of production plants can be computed and printed on one Calculagraph. Easily read, permanent Calculagraph time records eliminate the inaccuracies of hastily penciled, manually figured time cards. Calculagraphs are precision instruments with electric or spring drives.

Multiple recording on any number of cards — in any sequence

Calculagraphs handle any number of cards and compute the elapsed time for any number of different jobs. No sequence need be followed — time can be recorded as required on any card. Elapsed time is automatically figured and printed simultaneously with finishing time. Calculagraph is the most economical way of quickly obtaining absolutely accurate job time for computing costs. Now in use in plants and shops, everywhere.

Learn how CALCULAGRAPH can save you money and eliminate costly errors in your cost accounting—write, today, for literature.

CALCULAGRAPH
COMPANY • INCORPORATED
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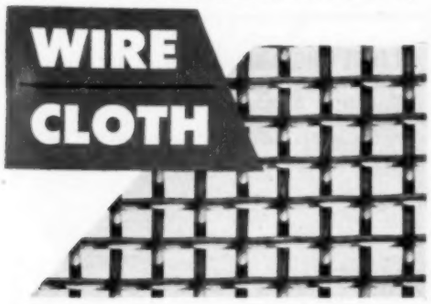
SINCE 1892 — STANDARD EQUIPMENT IN THE TELEPHONE INDUSTRY THROUGHOUT THE WORLD

BREVITY—Identify by IEN - 1364 if you write the maker



For every industrial use

Cal-Wic Wire Cloth is available in a wide selection of weaves, weights and meshes . . . fabricated in various types of metals and alloys for resistance to corrosion, abrasion or high temperatures.

Whether you use wire cloth in the manufacture of original equipment, or in screening, filtering, grading, cleaning or processing, it will pay you to investigate the cost-cutting advantages of long-wearing Cal-Wic Wire Cloth. Write for illustrated descriptive booklet.

CAL-WIC INDUSTRIAL SCREENS CF&I

IN THE EAST—WICKWIRE SPENCER STEEL DIVISION • Clinton, Massachusetts
IN THE WEST—THE COLORADO FUEL & IRON CORP. • Denver 2, Colorado
ON THE PACIFIC COAST—THE CALIFORNIA WIRE CLOTH CORP., Oakland 6, Cal.

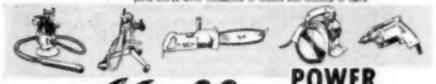
BREVITY—Identify by IEN - 1365 if you write the maker

The ¼" MallDrill that outdrills all Drills...

and we'll prove it in your plant under your own conditions

Whatever your drill requirements
• capacity • speed • weight • type of power
you'll find them in a MallDrill . . . for continuous, trouble-free production. Write today for a demonstration or the useful booklet, "Mike Hogan is a Hunk." MallDrills in all capacities—electric, flexible shaft, high-cycle, and pneumatic are available. For Mall makes the complete line of portable power tools.

20 Factory Service Branches in U. S. and Canada with complete parts stocks serve thousands of dealers and millions of users



Mall REG U S PAT OFF. **POWER TOOLS**
Put POWER into MANPOWER
77878 S. Chicago Avenue, Chicago 19, Ill.
Manufacturers of over 1000 Tools for A Million Jobs

BREVITY—Identify by IEN - 1366 if you write the maker

Depend on AUTO-LITE

FOR TEMPERATURE INDICATION

Model G Thermometer (one-to-one ratio, liquid filled type) Priced from $18.

Model V Thermometer (vapor pressure type) Priced from $10.25.

Auto-Lite Indicating Thermometers are available in many types and sizes, with a choice of temperature ranges and mountings to meet your needs. Send for catalog.

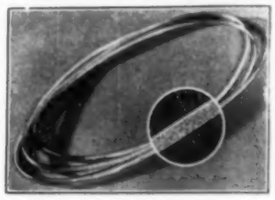
THE ELECTRIC AUTO-LITE COMPANY
INSTRUMENT AND GAUGE DIVISION • TOLEDO 1, OHIO
NEW YORK CHICAGO SARNIA, ONTARIO

AUTO-LITE
INDICATING & RECORDING THERMOMETERS

BREVITY—Identify by IEN - 1367 if you write the maker

POLISHING . . Diamond abrasive belt to finish the bore in drawing dies

Source: HARTFORD SPECIAL MACHINERY CO.
297 Homestead Ave., Hartford 12, Conn.



Nylon is impregnated with diamond abrasive in grades from 5 microns to 100 mesh in a new endless belt that the company has developed, particularly for use in its abrasive belt machine, previously described IEN-9594-49. The belt is employed in this machine with the abrasive facing outward. It rides between upper and lower pulleys and is threaded through the work, which is held on a centrally located table. The belt passes between adjustable guide pulleys below and above the work and operates at about 5,000 fpm. The table carrying the work rotates at a selected speed between 60 and 150 rpm.

Two sizes of belt, to apply on the two machines, measure 75 and 104 in. in length. Standard widths are 1/8, 7/16 and 3/8-in. in the smaller one, 7/16, 7/16 and 3/8-in. in the larger one. Dies with bores from ¼ to 3½ in. can be handled on the small machine with the shorter belt. Dies from 2½ to 9-in. in bore diameter can be handled on the larger one.

The nylon is not affected by humidity and can be cleaned by washing in warm soap and water. The belt is also impervious to oil so light oil can be employed as a coolant in the polishing operation. Belts that break in service can be rejoined.

BREVITY—Identify by IEN - 1368 if you write the maker

HEAT TREATING . . Electric furnace 9 to 50 kw., temperature to 2,500 deg. F.

Source: PERENY EQUIPMENT CO.
891-95 Chambers Road, Columbus 12, Ohio

Current input to the company's new Series-F6 electric furnaces is through a voltage-regulating transformer with 36 taps on multiple switches for flexibility of operation and close control on low temperature work. The furnace itself is available in sizes measured in the heating chamber at 8 by 10 by 4 in. to 16 by 30 by 12 inches. Each is assembled in a welded steel gas-tight insulated housing.

Globar silicon-carbide heating elements extend through the furnace above and below the hearth. They are equipped with air-cooled terminals and can be replaced from outside the housing without disturbing the work. A counterbalanced door closes on brick-to-brick overlapping contact. It is raised and lowered by a foot pedal which also connects with a gas curtained valve that places a flame across the opening upon opening the door. Control centers at a separate panel which can be specified in arrangement for various types of operation.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1369 if you write the maker

IMPORTANT INFORMATION FOR You...

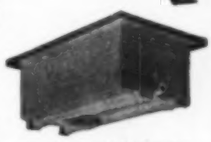
Write today for 16-page, fully illustrated Bulletin P-550 on the complete line of POWERSTAT Variable Transformers. Includes ratings, dimensions, connections and wiring diagrams plus application data.

WRITE TO THE SUPERIOR ELECTRIC CO. BRISTOL, CONNECTICUT

BREVITY—Identify by IEN - 1370 if you write the maker

make Electric Heat PAY-OFF with Sta-Warm compound melters

It's the efficient design of compound and soft metal melting and dispensing tanks, kettles or pots, that helps them to pay off on your production line. Design problems in compound melters are too highly specialized to permit cobbled-up, home-made tanks to get by.



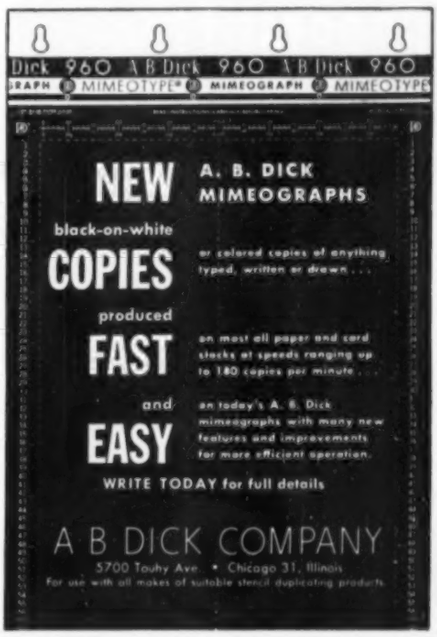
Broad, over-all heat distribution of 5 watts per sq. in. (max.) of tank surface is one of many advantages of Sta-Warm design. Note spun resistance wire covering entire area of tank sidewalls and bottom to eliminate heat concentration.

You'll get unusually high efficiency ratings from every Sta-Warm compound melter because 30 years of specialized engineering stands behind the Sta-Warm trademark today. Thirty years of concentrated, continuous experience by Sta-Warm engineers will help you get more daily production *at lower cost* whether you melt common or *uncommon* compounds.

Write today for Sta-Warm bulletins describing the melter you need.

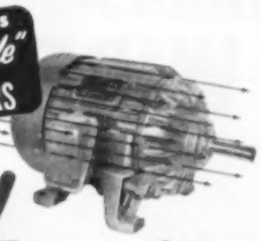
Sta-Warm ELECTRIC CO.
560 N. CHESTNUT ST., RAVENNA, OHIO

BREVITY—Identify by IEN - 1371 if you write the maker



BREVITY—Identify by IEN - 1372 if you write the maker

ALLIS-CHALMERS "Safety-Circle" TEFC MOTORS



NEW Easy to Clean Resists Corrosion

WORKING PARTS ARE ENCLOSED in rigid cast iron frame for strength and corrosion resistance. Dirt catching pockets in the cooling system are eliminated. Cleaning is easier and faster and is required less frequently — just blow off the dirt with an air hose.

Bearings are lubricated at the factory and operate without attention or cost for years. Call your nearest Allis-Chalmers Authorized Dealer or Sales Office for complete information or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletin 51B6144. A-2231

Safety Circle is an Allis-Chalmers trademark.

ALLIS-CHALMERS

BREVITY—Identify by IEN - 1373 if you write the maker

REEVES QUALITY FABRICS

These famous fabrics are good-looking and stay that way, washing after washing, because they're made of fine *combed* cottons — Sanforized* and vat-dyed in colors fast to sun, water and perspiration.

Write for full information.

*Standard shrinkage less than 1%

Reeves PARADE TWILL SANFORIZED · Reeves FLENGARIE POPLIN SANFORIZED · Reeves ARMY TWILL

REEVES BROTHERS, Inc., 54 Worth Street, New York 13, N. Y.

BREVITY—Identify by IEN - 1374 if you write the maker

Generalift PALLET BOXES

SEND FOR FREE BOOKLET TODAY

GENERAL BOX COMPANY.. engineered shipping containers

GENERAL OFFICES: 308 N. Dearborn St., Chicago 10, Ill.
DISTRICT OFFICES AND PLANTS: Cincinnati, Danville, N. J., Detroit, East St. Louis, Kansas City, Louisville, Milwaukee, Sheboygan, Winchendon. Continental Box Company, Inc., Houston, Dallas. General Box Company of Mississippi, Meridian, Miss.

BREVITY—Identify by IEN - 1375 if you write the maker

PRODUCT-PROVED WIRE

CONTINENTAL STEEL CORP. STEEL CONTINENTAL WIRE KOKOMO, IND.

● The worth of Continental wire has been *proved* in the products of hundreds of leading manufacturers. Continental wire is uniform in temper, uniform in coating. Whether your need is for a rust-resistant wire that can stand up under difficult forming operations . . . or for a shaped wire to provide smarter-looking, longer-lasting trim . . . Continental wire can help you build a better, more profitable product. Write Continental at Kokomo.

CONTINENTAL STEEL CONTINENTAL STEEL CORPORATION

NEWS NOTES—Continued

"Design suggestions on glass products"

BREVITY—Identify by IEN - 1376 if you write the maker

GLASS . . Product design suggestions in 8-page summary bulletin on company's line of glass

Libbey-Owens-Ford Glass Co.
1047 Nichols Bldg., Toledo 3, Ohio

Properties of glass are listed at the start of new Bulletin SPD-51 as suggestions for new product design. Following this are data summaries on characteristics, sizes, typical uses of glass in window, plate, electrical-conductive, heat-treated, transparent-mirror, insulated double-glazed types.

BREVITY—Identify by IEN - 1377 if you write the maker

GRINDING . . Application suggestions in book of examples of surface grinder work

Blanchard Machine Co.
62-66 State St., Cambridge 39, Mass.

Captioned pictures and condensed text are used in fourth edition of "Work Done on the Blanchard" to show scope of application for the company's surface grinding machines. Methods of grinding, chucking, holding fixtures are noted.

BREVITY—Identify by IEN - 1378 if you write the maker

IEN ON MICROFILM . . Your 1950 copies reproduced on microfilm to save storage space

University Microfilms
311-15 N. First St., Ann Arbor, Mich.

Approximate list price for reproduction of all the pages of Industrial Equipment News for 1950 on microfilm is $3.50, according to new information received. The price previously quoted in our description IEN-12190-50 and in prior special notes is incorrect. The service operates on a yearly basis, prints each page on standard 35-mm. film.

BREVITY—Identify by IEN - 1379 if you write the maker

MANAGEMENT . . Personnel problems under mobilization the subject of new AMA booklet

American Management Association
330 W. 42nd St., New York 18, N. Y.

Booklet 135 in the Association's Personnel Series reports a panel discussion of personnel problems faced by management in the mobilization period ahead. Its 64 pages describe planning, security and loyalty considerations, manpower utilization, a look ahead, economic education. List price is $1.25.

BREVITY—Identify by IEN - 1380 if you write the maker

MANAGEMENT . . Where the CED stands today presented in 20-page reprint booklet on recent talk

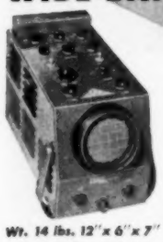
Committee for Economic Development
444 Madison Ave., New York 22, N. Y.

"The Role of CED Today" publishes an address by Thomas B. McCabe at a recent meeting. It reviews the present national situation, the steps that have been taken in defense production, and the part that the Committee has played and will play to promote understanding of basic economic objectives.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1381 if you write the maker

THE WIDE BAND POCKETSCOPE MODEL S-14-B® BY WATERMAN



Another Waterman POCKETSCOPE confirming the obsolescence of conventional oscilloscopes. Characterized by wide band amplifier fidelity without peaking as well as amazing portability. S-14-B POCKETSCOPE is ideal for laboratory and field investigation of transient signals, aperiodic pulses, or recurrent electrical wave forms.

Wt. 14 lbs. 12"x 6"x 7"

Vertical channel: 50mv rms/inch, with response within —2DB from DC to 700KC, and pulse rise of 0.35 μs. Horizontal channel: 0.3v rms/inch with response within —2DB from DC to 200KC, and pulse rise of 1.8 μs. Non-frequency discriminating attenuators and gain controls, with internal calibration of trace amplitude. Repetitive or trigger time base, with linearization, from ½cps to 50KC, with ± sync. or trigger. Trace expansion. Filter graph screen. Mu metal shield. And a host of other features.

WATERMAN PRODUCTS CO., INC. PHILADELPHIA 25, PA.
CABLE ADDRESS: POKETSCOPE

WATERMAN PRODUCTS INCLUDE:
S-10-B GENERAL POCKETSCOPE
S-11-A INDUSTRIAL POCKETSCOPE
S-14-A HI-GAIN POCKETSCOPE
S-15-A TWIN TUBE POCKETSCOPE
S-21-A LINEAR TIME BASE
Also RAKSCOPES, LINEAR AMPLIFIERS, RAYONIC® TUBES and other equipment

WATERMAN PRODUCTS

BREVITY—Identify by IEN - 1382 if you write the maker

From Air Conditioning To Atomic Research

THESE SMALL SWITCHES ARE DOING A BIG JOB

Series 240 Rotary Switches

. . . now available in over 30 circuit variations for heater, motor and low-voltage A.C. electronic applications

Brand new only a few months ago, today in dozens of products, both civilian and defense, Series 240 Switches are proving the value of their exclusive combination of features:

● *Compactness* — unmatched by any comparable switch: base only 1½" high, 1¼" wide, 1" deep. Available in single hole mounting and bezel equipped models. Latter snaps into mounting hole for fast assembly with spring clips holding it firm.

● *Heat Resistance* — completely efficient operation with ambient temperatures up to 400° F.

● *Entirely Enclosed* — for safety, and protection of working parts.

● *High Overload Capacity* — ratings are conservative: 7½ A. 240 V. 15 A. 120 V. 25 A. 120-240 V. 1H.P. 120 V. 2 H.P. 240 V. A.C. only. Underwriters' Laboratories Approved.

● *Peak Performance and Long Service Life* — thanks to ingeniously simple design, rugged construction, heavy silver contacts and long recognized "Diamond H" slow-break principle.

Write today for complete details on how Series 240 Switches will meet your needs.

THE HART MANUFACTURING COMPANY
203 BARTHOLOMEW AVENUE, HARTFORD, CONNECTICUT

BREVITY—Identify by IEN - 1383 if you write the maker

MODEL 14R illustrated. Instant Reverse! Instant Neutral!

• VARIABLE SPEED Zero-Max TORQUE CONVERTER

NOW you can have INSTANT REVERSE with FULL TORQUE CONVERSION and INFINITELY VARIABLE SPEED in both directions in one compact unit. Also instant neutral allows manual operation of output shaft . . . Investigate the Zero-Max for your transmission problems. Many models for use with motors up to, and including, ¼ h.p.

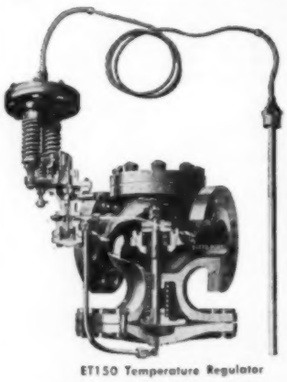
Write TODAY for New Bulletin No. 50

In Canada: ALLIANCE MOTOR & TOOL CO., Ltd., Exclusive Distributors

REVCO REVCO INCORPORATED 407 THORPE BUILDING MINNEAPOLIS 2, MINNESOTA

BREVITY—Identify by IEN - 1384 if you write the maker

LOW COST Temperature Control



ET150 Temperature Regulator

Tops in performance for both storage and instantaneous heaters, this pilot-operated Spence regulator offers these important advantages:

SECO Metal Seats and Discs — 20 years experience has failed to produce a single case where SECO Metal has been cut by steam.

Packless Construction — minimizes friction . . . eliminates much time-consuming maintenance.

Large Metal Diaphragm — under usual conditions never requires replacement.

New bulletin gives complete data on the entire line of Spence regulators. They are made in sizes from ¼" to 12" for service with air, steam, water, oil or gas. Write for your free copy of Bulletin 500 today. SE-106

Spence

SPENCE ENGINEERING COMPANY, INC.
WALDEN, NEW YORK

BREVITY—Identify by IEN - 1385 if you write the maker

Here's Why

MOTO-TRUCS ARE THE Shortest OF THEIR TYPE Built

They operate in NARROWER aisles.

SHORTIE MODEL 23¾"

Shorter overall length, simplest control through easy grip roller type handle, Nydegger shackles for smooth travel over uneven floors, new and exclusive braking system for safety—these are a few of many Moto-Truc advantages. *WRITE FOR BULLETIN NO. 50, and specifications.*

MOTO-TRUC MOTORIZED BATTERY OPERATED Walkie PALLET TRUCK

The MOTO-TRUC Co. 1952 E. 59th Street CLEVELAND 3, OHIO.

Originators and world's largest exclusive manufacturers of motorized, battery operated walkie type trucks

PALLET TRUCKS, HI-LIFT TRUCKS, PLATFORM TRUCKS

BREVITY—Identify by IEN - 1386 if you write the maker

BUILD WITH GIANT G-P PANELS

Standard 12', 14' and 16' lengths or "Scarfed" to suit your needs

Georgia-Pacific giant Fir Plywood panels are helping to solve production problems and are saving installation time and money in countless industrial, construction and marine uses.

Quality-produced by modern hot plate presses, these extra-length panels are available in natural 12 ft. or scarfed 14 ft. and 16 ft. lengths. Special sizes to meet your specific application can also be produced.

Write, wire or phone your nearest G-P office for prices and size recommendations to fit your particular application.

GEORGIA—PACIFIC PLYWOOD & LUMBER CO.

612 North Capitol Way, Olympia, Washington

Offices or Warehouses in: Augusta · Birmingham · Boston · Chicago · Columbia · Louisville · Memphis · Nashville · Newark · Philadelphia · Portland · Olympia · Raleigh · Richmond · Savannah

BREVITY—Identify by IEN - 1388 if you write the maker

MARKING . . Label heater activates thermoplastic labels

Source: POTDEVIN MACHINE CO. 1285 38th St., Brooklyn 18, N. Y.

Label Activator designates new roll-type machine employing thermostatically-controlled electric heat to prepare labels that have been precoated with thermoplastic material. The coating is made tacky by the heat and is immediately ready for application on fabric, glass, metal, plastic.

The machine does not employ any liquid. Its heating range can be adjusted for given purposes. Two sizes take labels to 6 and 12 in. in width. The electrically-heated roll is motor driven. Operation is on 110-volt, 60-cycle ac.

BREVITY—Identify by IEN - 1389 if you write the maker

INSULATING . . Laminated plastic provides arc resistance at 60 cycles

Source: FORMICA CO. 4612-22 Spring Grove Ave., Cincinnati 32, Ohio

Sample available upon request

Fabric sheets in coarse weave are impregnated with arc-resistant resin and laminated in thicknesses from $\frac{1}{16}$ in. up in manufacture of the company's new Type Z-80 insulating sheet material. Color is natural. Finish is semi-gloss. Tensile strength is 11,000 lbs. per sq. in. in lengthwise direction, 6,000 lbs. per sq. in. crosswise. Flexural strength is 20,000 lbs. per sq. in. lengthwise, 14,000 lbs. per sq. in. crosswise.

The material is characterized by its dimensional stability, its arc resistance and its low power loss at 60 cycles. Dielectric strength perpendicular to the lamination in a $\frac{1}{16}$-in. sheet is 490 volts per mil in short time action.

BREVITY—Identify by IEN - 1390 if you write the maker

LUBRICATING . . Gravity feed cup, feed adjustment, transparent housing

Source: TRICO FUSE MFG. CO. 2948 N. 5th St., Milwaukee 12, Wis.

Sizes range from 10 oz. to 2½ qt. in four new gravity-feed lubricators in which Pyrex glass or lucite plastic can be specified for the reservoir and the sight feed. Adjustment for the feed rate is provided at the top of the housing. A valve in the same location can be set for shut-off, predetermined flow, or can be held at a 45-deg. angle to flush the bearing. Construction includes a dustproof self-closing filler cap. Metal parts are reinforced and silver brazed.

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BREVITY—Identify by IEN - 1391 if you write the maker

IT'S ALLIED FOR RCA SPECIAL-PURPOSE TUBES FOR INDUSTRY

All Types in Stock
- Vacuum Power
- Thyratrons
- Vacuum & Gas Rect.
- Ignitrons
- Cold-Cathode
- Phototubes
- Oscillograph Tubes
- Camera Tubes
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the world's largest distributors of RCA special-purpose tubes

ALLIED maintains *in stock for quick shipment* the world's largest inventory of RCA special-purpose electron tubes—*of all types*. We specialize in supplying the tube needs of industrial, broadcast, governmental and other users. Shipments are made *from stock* to any part of the nation within hours after we receive your order. Fill *all* your tube needs from a *single, dependable source*.

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Valuable guide to selection of proper RCA tube type replacements. Lists 1600 tube types. Write for FREE RCA Guide No. 37-046.

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Make ALLIED your central supply source for *all* electronic supplies—parts, tubes, test instruments, tools, audio amplifiers, accessories—available *immediately* from the world's largest stocks. Order from your ALLIED Catalog—the leading Electronic Buying Guide. Ask for your FREE copy.

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BREVITY—Identify by IEN - 1392 if you write the maker

PROVIDING THE FASTEST, MOST ECONOMICAL METHOD KNOWN FOR CONNECTING AND DISCONNECTING PRESSURIZED FLUID-CARRYING LINES

Aeroquip

SELF-SEALING COUPLINGS

AEROQUIP CORPORATION JACKSON, MICHIGAN

FLEXIBLE HOSE LINES; DETACHABLE, REUSABLE FITTINGS; SELF-SEALING COUPLINGS; "BREAKAWAY"; HYDRAULISCOPE

BREVITY—Identify by IEN - 1393 if you write the maker

WRIGHT Again!

now...new FRAME "B" Speedway

● Rugged construction, yet light and portable, the new **Wright Frame "B" Speedway Electric Hoists** are designed for service in practically any location. Ideally balanced for hook suspension. ● Ball and roller bearings, alloy steel gears, swaged cable fittings, heavy duty motor, silver contact controls are some of the features which assure long life and low maintenance cost. Capacities from 250 lbs. to 1000 lbs.

Write for literature.

ACCO York, Pa., Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

WRIGHT HOIST DIVISION AMERICAN CHAIN & CABLE

In Business for Your Safety

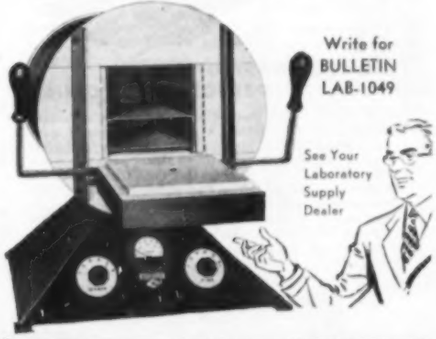
BREVITY—Identify by IEN - 1394 if you write the maker

HEVI DUTY ELECTRIC COMPANY

"MULTIPLE UNIT" TEMPERING FURNACE

For Temperatures to 1250° F.

A high speed centrifugal fan located in the rear of the heating chamber supplies rapid and uniform heating. Shelves and baffle are easily removed.



Write for BULLETIN LAB-1049

See Your Laboratory Supply Dealer

HEVI DUTY ELECTRIC COMPANY

HEAT TREATING FURNACES · HEVI-DUTY · ELECTRIC EXCLUSIVELY · DRY TYPE TRANSFORMERS — CONSTANT CURRENT REGULATORS

MILWAUKEE 1, WISCONSIN

BREVITY—Identify by IEN - 1395 if you write the maker

make Ingersoll your prime source of supply for SPECIAL STEELS

Alloy Steels . . . Armor Plate . . . Clutch Plate Steels . . . Tillage Steels . . . Soft Center Steel . . . Shovel Steels . . . Knife Steels . . . Saw Steels, Including High Speed Hack Saw Blade Steels . . . TEM-CROSS Steel . . . Stainless Steels . . . INGACLAD Stainless-Clad Steel

Ingersoll STEEL DIVISION

BORG-WARNER CORPORATION
New Castle, Indiana
Plants: New Castle, Indiana; Chicago, Illinois; Kalamazoo, Michigan

ENGINEERING BW PRODUCTION

BREVITY—Identify by IEN - 1396 if you write the maker

PIC STEEL UNIONS ARE 100% ZINC PLATED — ESPECIALLY DESIGNED FOR USE ON ORIGINAL EQUIPMENT

Here's a *quality* steel union that more and more manufacturers are choosing for installation on their original equipment. Attractive, bright — completely rust protected with zinc plating *even* on the threads, this unusual union has ends of heavy steel pipe coupling stock and a special wedge-type bronze seat. Easy installation with either open ended or pipe wrenches. This 150# PIC union sells for less than a galvanized union—no more than a black malleable union.

WRITE FOR FREE SAMPLES!

DART UNION COMPANY PROVIDENCE 5, R. I.

BREVITY—Identify by IEN - 1397 if you write the maker

It pays to call your shots when selecting Unit Heaters

AIM FOR CONSTRUCTION, PERFORMANCE, DESIGN

First choice — *Modine!* Unmatched for construction, performance, and styling, Modine Unit Heaters stand out in every service. They provide maximum resistance to corrosion and stresses through all-copper and copper-alloy steam-carrying passages . . . cylindrical tubes and headers . . . brazed joints. Parker-Bonderizing protects casings from rust. Skillful engineering creates the right combination of outlet temperature and air velocity for uniform comfort . . . maximum economy. Along with this, Modines give you beautiful styling by one of America's top industrial designers.

GET ALL THE FACTS *from your Modine representative—listed in the classified section of your phone book. Or write direct Modine Mfg. Co., 1504 Dekoven Avenue, Racine, Wis. Ask for Modine Unit Heater Bulletin 149A.*

U-1077

Modine UNIT HEATERS

NEWS NOTES—Continued

"Training school for spray painting"

BREVITY—Identify by IEN - 1398 if you write the maker

MANAGEMENT . . Booklet on public relations tells how to plan a program, suggests methods

National Publicity Council
257 Fourth Ave., New York 10, N. Y.

How to get facts to serve as a basis for planning is initial chapter in new 48-page booklet, "Public Relations Programs—How to Plan Them," written by the Council's Executive Director. List price is $1. Although intended primarily for community-serving organizations, the booklet contains useful information on planning methods, and factors to consider.

BREVITY—Identify by IEN - 1399 if you write the maker

MANAGEMENT . . How much capital do we need, book makes an estimate for the years 1946 to 1960

Twentieth Century Fund
330 W. 42nd St., New York 18, N. Y.

"America's Capital Requirements" titles new 252-page book, list price $3, is an estimate of the amount of capital goods needed to meet such requirements as population growth and economic expansion, current obsolescence and depreciation, unfilled backlogs. The estimates are grouped into four major fields of urban development, commercial and industrial facilities, transportation, rural development.

BREVITY—Identify by IEN - 1400 if you write the maker

METAL SPRAYING . . House publication shows equipment application on machine elements

Metallizing Engineering Co.
38-16 30th St., Long Island City 1, N. Y.

Current issue of "Metco News" concerns applications of Metcoloy No. 2 stainless steel as a wear-resistant surfacing material on machine parts. Procedures are given for a number of specific instances. Ask to have your name added.

BREVITY—Identify by IEN - 1401 if you write the maker

PACKAGING . . Useful information on how to handle, store, fill multiwall paper bags

Bemis Bro. Bag Co.
406-10 Pine St., St. Louis 2, Mo.

Line drawings show recommended procedures in new 20-page "Multiwall Packaging Guide." Topics cover proper storage of empty paper bags, filling and closing methods, proper handling of filled bags, car loading, repair methods, palletizing. There is a note on services offered by the company.

BREVITY—Identify by IEN - 1402 if you write the maker

PAINTING . . Classes still open in company's training school for spray painting

DeVilbiss Co.
305 Phillips Ave., Toledo 1, Ohio

First classes have started in the company's twenty-sixth annual School of Spray Painting. Other classes will start early in the next several months through June. The one-week courses are free, the only charge being for meals and lodging.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1403 if you write the maker

Model TKM-6

NEW! PULLMAX WIRE STRAIGHTENING MACHINE

★ FULLY AUTOMATIC! ★ ANY DESIRED LENGTH TO 19'6"!
★ STRAIGHTENS AND CUTS WIRE OF 3/32" TO 9/32" DIAMETER!
★ RATE OF FEED 56' TO 181' PER MINUTE!

An automatic machine with rotating straightening dies that relieve internal stress in wire. Wire is cut by contacting adjustable stop. Built sturdy and rugged to the highest standards of precision. All high speed shafts are mounted in ball bearings. Gears are hardened chromium nickel steel—All meshing parts, rollers and guides are hardened and ground.

Machines cut any desired length to maximum of 19'6". Receiving trays available in multiples of 3'3" up to a maximum of 19'6".

WRITE FOR LITERATURE AND PRICES

AMERICAN PULLMAX COMPANY, INC.
2631 NORTH WESTERN AVENUE, CHICAGO 47, ILLINOIS

BREVITY—Identify by IEN - 1404 if you write the maker

A. J. Gerrard has a complete line of versatile strapping equipment and the "know-how" which will simplify your material handling and shipping needs. We specialize in solving those hard-to-do problems of industry.

Call the A. J. Gerrard man in your city or write direct. No obligation.

Strap calculator. Write for your free copy.

STEEL STRAPPING

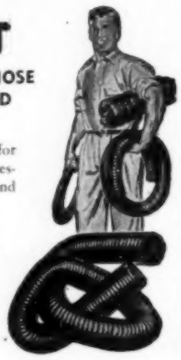
A. J. Gerrard & Co.
1950 HAWTHORNE BOULEVARD
MELROSE PARK, ILLINOIS (CHICAGO SUBURB)

BREVITY—Identify by IEN - 1405 if you write the maker

FOR VENTILATION, FUME & DUST CONTROL

FLEXAUST

SPIRAL-REINFORCED HOSE LIGHT, STRONG AND VERY FLEXIBLE



Flexaust is of proven suitability for a wide variety of suction and pressure uses in ventilation, fume and dust control.

EXTREMELY EASY TO INSTALL—EFFICIENT AND ECONOMICAL IN USE

SIZES 1/4" to 24" dia.
Various Flexaust types, accessories, and other hose types also available:

BLOFLEX — Non-reinforced collapsible hose
PORTOVENT — Ring-reinforced retractable hose

Write for full descriptive data and prices

AMERICAN VENTILATING HOSE CO.
Dept. IE-2, 15 Park Row, New York 7, N. Y.
Plant: Amesbury, Mass.

BREVITY—Identify by IEN - 1406 if you write the maker

Workmen cannot touch conductor bars on cranes or monorails when bars are enclosed in CON-L-DUIT, a specially compounded neoprene-base insulation. CON-L-DUIT leaves no gaps or openings for fingers or bars to enter. CON-L-DUIT *provides complete protection* on curves, straight runs, switches, interlocks and drop sections. It is inexpensive and easy to install. Made in sizes to fit all new or existing figure-8 conductor bar systems, CON-L-DUIT surpasses State Safety Codes. Dealers everywhere.

WRITE FOR CATALOG

CON-L-DUIT
APPROVED SAFETY ENCLOSURE

CALABAR CORP. South Gate, California

BREVITY—Identify by IEN - 1407 if you write the maker

SET NO. 1 FOR SMALL SHOPS

Continental Interchangeable Counterbore sets give you a wide variety of cutting tools in a compact, convenient form. Three sets are available, for the large or small toolroom. Each set features the famous Continental indestructible drive that will not stick, will not break, and is always hand detachable. Full details are given in Bulletin D27161. Send for your copy.

CONTINENTAL TOOL WORKS
Division of Ex-Cell-O Corporation
Detroit 32, Michigan

CTW

BREVITY—Identify by IEN - 1408 if you write the maker

Low-cost assembly

of another quality product with

Pliobond

After years of experience with PLIOBOND — Goodyear's rubber-like adhesive that "bonds anything to anything"—the makers of the famed Maas-Rowe Vibrachime are thoroughly satisfied with the low-cost assemblies it makes possible.

They use this one adhesive to form a variety of quick, ready bonds that are positive and permanent—felt to wood, metal and plastic. No primers, activators or heat cures are required—just a simple application to each of the surfaces to be bonded. Result: quicker assemblies, lower cost, long-lasting bonds.

PLIOBOND may well be the answer to your own assembly problem. Ask for full details on this versatile, quality adhesive that's available through convenient distributors, coast to coast. Write today to:

GOODYEAR, CHEMICAL DIVISION
AKRON 16, OHIO

GOODYEAR

We think you'll like "THE GREATEST STORY EVER TOLD" Every Sunday – ABC Network

BREVITY—Identify by IEN - 1410 if you write the maker

COMPRESSOR . . Diesel engine driven, wheel mounted, 600 cfm. at 1,200 rpm.

Source: SCHRAMM INC.
800 E. Virginia Ave., West Chester, Pa.

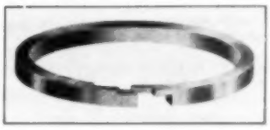
Model 600 is a new compressor in the company's line with diesel-engine drive and spring-equipped wheel mounting or skid mounting to specification. It is a six-cylinder unit rating 600 cfm. at 1,200 rpm. It weighs 13,000 lbs. in the wheel assembly, 12,500 lbs. on skids.

The engine is an International Harvester Model UD-24 diesel unit. Engine and compressor are water cooled and the equipment can be operated with the side doors in place. Operating control is automatic, following initial start, with control centering in demand for compressed air.

BREVITY—Identify by IEN - 1411 if you write the maker

SEALING . . One-piece piston ring locks ends in against catching in port

Source: DOUBLE SEAL RING CO.
2063-67 Montgomery St., Fort Worth 7, Texas

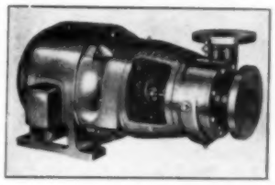


Sealock is new design in the company's one-piece piston ring that includes a tongue on one end that locks radially in back of the other end in a mating recess in that end. The ring is designed particularly for use in two-cycle engines in which the ring must pass a port. It is suited also for four-cycle engines and for cylinder uses to minimize wear by the radially-locked construction. Sizes are to specification on quantity order.

BREVITY—Identify by IEN - 1412 if you write the maker

PUMP . . Single stage centrifugal with enclosed impeller, 1 to 600 gpm.

Source: F. E. MYERS & BRO. CO.
87 Orange St., Ashland, Ohio



Bronze or iron can be specified, with designs for low and high-head operation and speeds of 1,750 or 3,500 rpm., in this new general-purpose line of single-stage enclosed-impeller, single-suction horizontal centrifugal pumps. Pump and motor constitute a unit assembly as shown in the illustration.

The line is designed to handle hot or cold water, light oils and non-corrosive liquids with pumping capacity at 10 to 600 gpm. against heads to 280 ft. and temperatures to 220 deg. F.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1413 if you write the maker

TOUREK
BALL JOINTS • PIPE PLUGS
AND
QUALITY SCREW MACHINE PRODUCTS

Tourek's quality Ball Joints meet exacting requirements. Simplified design, improved performance, and lower costs result from specifying Tourek Ball Joints . . . the only recognized standard. Large stocks assure prompt delivery.

Tourek's precision commercial steel pipe plugs are accurate, high strength, and economical—resulting in the highest quality at costs which are competitive to old style plugs.

Stock sizes, available with National Pipe or Dry-Seal threads are: ⅛", ¼", ⅜", ½" and 1". Also available on special order in alloy steels, aluminum or brass in sizes up to 2½" diameter.

Modern high speed single and 6-spindle automatics—together with complete secondary equipment, including grinding and honing—plus 50 years' experience, assure you "The Best in Quality Screw Machine Products."

Your requirements, up to 2½", are made with utmost precision, and with prompt-or delivery guarantee.

LITERATURE
Comprehensive data on any or all Tourek products sent promptly upon request . . . write for your copy. J. J. TOUREK MFG. CO. 4701 W. 16th St., Chicago 50, Ill.

TOUREK
"THE BEST IN QUALITY SCREW MACHINE PRODUCTS"

ESTABLISHED IN 1920

BREVITY—Identify by IEN - 1414 if you write the maker

AIR RAID

Zoom down on Dirt, Dust, and Grit with a CLEMENTS-CADILLAC blower - suction cleaner, and you've got the enemy on the run. Use this powerful air weapon to rout the trouble makers from every crack and crevice of your machinery and equipment. Deal 'em a hard blow—regularly.

SAVE
TIME • MONEY
PREVENT DAMAGE TO MACHINERY WITH THE . . .

Made in 5 models with attachments for every cleaning job.

CLEMENTS CADILLAC
PORTABLE COMBINATION BLOWER-SUCTION CLEANER

CLEMENTS MFG. CO.
6620 S. NARRAGANSETT AVE. CHICAGO 38, ILL.

ASK YOUR MILL SUPPLY DEALER OR WRITE US FOR DATA

BREVITY—Identify by IEN - 1415 if you write the maker

Rapistan Cold-Forged caster raceways are shaped by high-pressure coining, like silver dollars, then case hardened. They wear longer, cost less. Available in 3 series—serving a variety of applications . . . in wheel sizes ranging from 3¼" to 8".

Write today for new free catalog of Rapistan Casters and Trucks.

Rapistan® CASTERS

The RAPIDS-STANDARD COMPANY, Inc., 521 Rapistan Bldg., Grand Rapids, Mich.

BREVITY—Identify by IEN - 1416 if you write the maker

6-Way Pay off . . . with the
PRATT & WHITNEY KELLERFLEX CARBIDE

DI-BUR TRADE MARK

1 MASTER GROUND BY MACHINE!
To cut smooth and true — right down to the nose.

2 DEEP FLUTED!
For greater chip clearance—remove tough metal freely.

3 NO SHARP SLIVERS!
Instead, fine granular chips — easy on the hands.

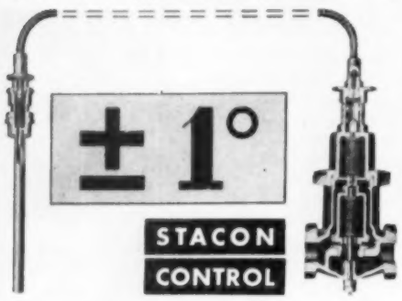
4 RUN AT SLOWER SPEEDS!
Run at half the rpm of ordinary carbide burs — for an effortless, smooth finish.

5 CUT COSTS, TOO!
Because there's less load, less wear and tear on portable machines.

6 Stocked to meet your immediate cost-cutting needs in 50 shapes and sizes.

KELLERFLEX *Carbide* **DI-BURS**

BREVITY—Identify by IEN - 1417 if you write the maker



Temperature regulation to plus or minus one degree F. is the unheard-of accuracy obtainable with the self-operated Farris Stacon Temperature Regulator.*

Two design factors are responsible:

1. Liquid in bulb flashes to vapor in power bellows steam does 99 per cent of the work...without appreciable time lag.
2. Full balancing bellows has the effect of double seated operation with single seated valve.. eliminates spring counterpoise and all packing glands. provides free-floating valve disc... prevents response to variations in steam temperature.

Stacon Regulators are compact, trouble-free, dirt-proof. They operate consistently in the worst possible surroundings and require no maintenance.

You'll want to learn more about the most sensitive, accurate, economical temperature regulator on the market. Write for Stacon Bulletin 50-1000.

*PATENTED

Farris Stacon Corp.

432 COMMERCIAL AVE. • PALISADES PARK, N. J. 6689

BREVITY—Identify by IEN - 1418 if you write the maker

TO FIT YOUR EVERY NEED

Through years of experience and careful planning, Abart engineers have developed a speed reducer to fit your product . . . to meet your every need. Regardless of the required input and output, or whether you need a single or double reduction, there is an Abart Speed Reducer to do the job better . . . to give you long service life. They are available in 75 different models with ratings from 1/50 to 417 h.p. and with ratios up to 10,000 to 1. Compact. Oil-tight. Dust-free.

SEND FOR CATALOG

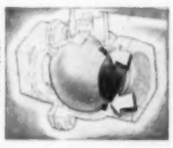
It will aid you in selecting the Abart Speed Reducer which is exactly suited to your needs.

ABART GEAR & MACHINE CO.

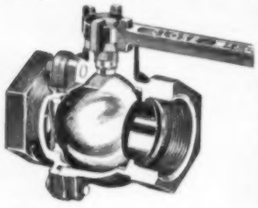
4823 WEST 16th STREET, CHICAGO 50, ILLINOIS
Mfrs. of Gears and Speed Reducers

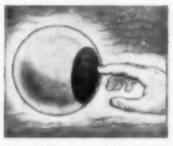
BREVITY—Identify by IEN - 1419 if you write the maker

ROCKWOOD Ball VALVES



1. Leak proof service





2. Full round flow

3. Quick opening and closing — easy to install

These remarkable engineering features of the Rockwood Ball Valve will give efficient and economical operations thru years of everyday rugged use. They help increase production and profits by cutting maintenance cost.

Install Rockwood Valves in your plant today and your valve headaches will stop!

Recommended for 300 p.s.i., Rockwood Valves are available in all pipe sizes from ½" to 4".

Distributors in all principal cities. Write for illustrated folder V-4.

ROCKWOOD SPRINKLER CO.

40 HARLOW STREET WORCESTER 5, MASS.

NEWS NOTES—Continued

"How to fabricate plastic-lined pipe"

BREVITY—Identify by IEN - 1420 if you write the maker

PIPE . . Fabrication suggestions in catalog on Saran plastic-lined pipe, fittings

Saran Lined Pipe Co.
2413-17 Burdette Ave., Ferndale 20, Mich.

Detail procedures are set forth in new 32-page catalog, "Saran Lined Pipe," for cutting and threading pipe lined with Dow Chemical Company's Saran plastic. Instructions on making up joints accompany drawings of typical connections of pipe and fittings. Sizes are given on fittings and valves.

BREVITY—Identify by IEN - 1421 if you write the maker

PLASTIC MOLDING . . Automatic machines described by booklet as to characteristics and uses

F. J. Stokes Machine Co.
5956 Tabor Road, Philadelphia 20, Pa.

Steps in development of automatic molding machines for thermosetting plastics are traced in new 24-page booklet, "Fully Automatic Molding." The booklet reviews characteristics of automatic machines and shows a number of examples made by the machines in production quantities.

BREVITY—Identify by IEN - 1422 if you write the maker

PROTECTING . . Factory health service of an English company described in 24-page booklet

Cadbury-Fry America, Inc.
259-63 Broadway, New York 7, N. Y.

Example of what one company is doing to promote good health among its employees is described in new booklet, "A Factory Health Service," published by Cadbury Brothers Ltd., a large chocolate manufacturer. You may get an idea for your own use from its medical and dental facilities.

BREVITY—Identify by IEN - 1423 if you write the maker

PUMPS . . Booklet tells how to test performance of self-priming centrifugal pump

LaBour Co.
1540 Sterling Ave., Elkhart, Ind.

How it works is described for the company's self-priming centrifugal pump at the start of new 32-page "Handbook on Performance and Testing". This is followed by a section on terminology and general performance, is concluded by a section on test equipment and procedure.

BREVITY—Identify by IEN - 1424 if you write the maker

RESEARCH . . Fellowship awards for graduate research in 1951-1952 academic year

E. I. duPont deNemours & Co.
Room 2518 Nemours Bldg., Wilmington 98, Del.

Authorized expenditure of $390,400 has been set up for 78 post-graduate and post-doctoral fellowships in 47 universities for the coming academic year. It is part of the company's 32-year-old plan to encourage fundamental research in chemistry, physics, metallurgy, engineering.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1425 if you write the maker

ASSOCIATED BAG & APRON CO.

2640 WEST BELDEN AVENUE • CHICAGO 47, ILLINOIS

BREVITY—Identify by IEN - 1426 if you write the maker

Aluminum Electric Motor Housing

You're sure of a strike like this, when you've made sure your tackle and technique are RIGHT.

And you can't miss if you apply the same principle in buying aluminum and magnesium castings.

Particularly when you specify *Well-Cast* castings. You know you are getting 40 years' experience; three *complete* plants; X-Ray facilities; close metallurgical control; quality production technique.

Sand, semi-permanent, permanent mold.

Like to receive the Wellman Magazine each month?

Drop us a note.

"A Light Casting Is the Right Casting"

Well-Made wood and metal patterns
Well-Cast Ampco bronze castings

THE WELLMAN BRONZE & ALUMINUM COMPANY

2510 EAST 93rd STREET ★ CLEVELAND 4, OHIO

BREVITY—Identify by IEN - 1427 if you write the maker

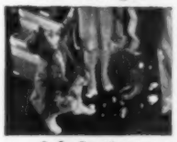
"Grigsby's been awful hard to throw since he lined the seat of his pants with slip-resistant 4-WAY Safety Plate."

For greater safety under foot, in your plant and on your products

Inland 4-Way® Safety Plate

Adds Strength

Easy to Fabricate



Safe Footing

Easy to Clean

STOCKED BY LEADING STEEL WAREHOUSES

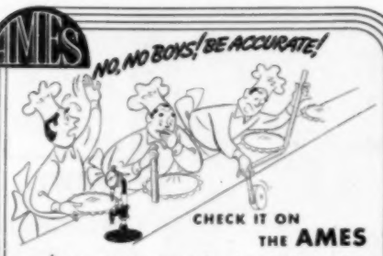
INLAND

INLAND STEEL COMPANY, Dept. IEN-23
38 So. Dearborn St., Chicago 3, Ill.
Sales Offices: Chicago, Davenport, Detroit, Indianapolis, Kansas City, Milwaukee, New York, St. Louis and St. Paul.

New Bulletin with New Ideas — Just Out! Bulletin FI. Complete engineering and application data. Send for it!

BREVITY—Identify by IEN - 1429 If you write the maker

AMES NO, NO BOYS! BE ACCURATE!



CHECK IT ON THE AMES

A cost conscious restaurateur actually employs an Ames Thickness Measure to hold pie crust thickness to a uniform standard, thereby cutting down raw material waste, lowering fuel costs and assuring top quality pastry day in and day out. This unusual solution to a measuring problem is illustrative of the creative thinking of Ames engineering and design department. They'll tackle any measuring problem you may have and come up with a sound answer that will improve your quality control. Ames has built gauges to measure the thickness of potato chips, soap flakes, enamel on teeth, as well as gauges that check the sway of buildings, the stretch of bolts plus many others that solve successfully unusual and difficult applications. If you are puzzled and want an economical answer to a measuring problem, send it to B. C. Ames today.

Ames No. 1 Dial Comparator — measures objects up to 2" in cross section. Adjustable table with positive locking screw. Height 9½", weight 4 lbs., Dial Indicator graduated .001", with .250" range.

Representatives in principal cities B. C. AMES CO. 23 Ames Street Waltham 54, Mass.
Mfgr. of Micrometer Dial Gauges • Micrometer Dial Indicators

BREVITY—Identify by IEN - 1430 If you write the maker

TRUCKS AND TRAILERS MOVE FASTER, EASIER ON NEW WHEELS BY ELECTRIC

Modernize baggage-trucks, industrial trailers, floor trucks, mail carts and other portable equipment with new ELECTRIC wheels **for faster, easier handling.** There is an ELECTRIC wheel for every job.

Our 65 years of engineering "know-how" assures you of top performance from ELECTRIC equipment.

ELECTRIC wheels are furnished with or without roller bearings to fit your own axles or complete with axles—steel tires, molded-on-tires, or pneumatic tires. All types are available in a full range of sizes.

Our experienced engineers are always at your service.

WRITE FOR COMPLETE INFORMATION

ELECTRIC WHEEL CO.
2814 SPRUCE · QUINCY, ILLINOIS

BREVITY—Identify by IEN - 1431 If you write the maker

SAVE on OPERATING COSTS and RENT with CARD Sturdi-Lite SAFETY LADDERS

EASY to move around, SAFE to work on, handy shelf or basket at top. Amazingly LIGHT WEIGHT but STRONG tubular ALUMINUM construction, including hand rails. Sturdy one-piece steps, non-skid rubber treads. Ball-bearing casters on two rear legs and front Swiveling Caster. Heavy coil spring keeps the two front rubber feet off floor until a person steps on ladder, then they lower and rest securely on floor.

MANY Time-Saving USES in factory assembly lines, maintenance work, stock, tool and file rooms, etc.

SAVE SPACE—stack things HIGH in files, shelves, bins, lockers, etc. They're easy to get at, with CARD SAFETY LADDERS.

For NARROW AISLES — 18" width in 3-step, 4-step and 5-step with shelf or basket at top.

For WIDE AISLES — 24" width in 4-step, 5-step and 6-step with shelf only at top.

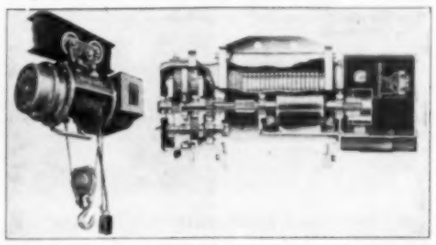
ALSO 2-step Stools and Rollaways. Write.

D. R. CARD COMPANY
National Distributor
829 MERCHANDISE BLDG.
MINNEAPOLIS 3, MINN.
Mfrs.: BURD METAL PRODUCTS
Clearwater, Fla.

BREVITY—Identify by IEN - 1432 If you write the maker

HOIST . . Drum type electric in six ratings between ½ and 5 ton

Source: CLEVELAND CHAIN & MFG. CO.
Henry & Broadway Sts., Cleveland 5, Ohio



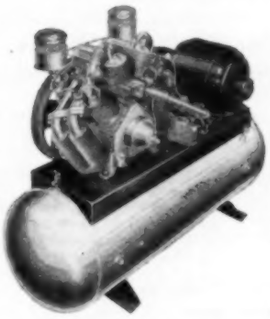
Bob-Cat trade names new line of six electric drum-type hoists in which the ball-bearing Ohio motor is mounted inside the load drum and is spline coupled to the drive shaft leading through a double internal gear train that includes two Weston load brakes. The opposite end of the motor is fitted with a solenoid brake connected to a cutoff switch limiting upward movement. Load-carrying parts are made of steel forgings and castings.

The hoist employs a $\frac{5}{16}$-in. preformed plow-steel wire rope with a load hook that oscillates and also swivels on anti-friction bearings. Operation can be specified on 220 to 550-volt 3-phase 60-cycle ac. with control centering at a pendant rope or pushbutton on a pendant line with a strain relief. The control circuit is 110-volt ac. on reduction through a transformer that is built in for this purpose.

BREVITY—Identify by IEN - 1433 If you write the maker

COMPRESSOR . . Two-stage air-cooled tank mounted, rates 30 cfm., 7½ hp.

Source: WAYNE PUMP CO.
511-23 Tecumseh St., Fort Wayne 4, Ind.



Model W-6308-H is illustrated in the company's recently improved line of horizontal and vertical tank mounted air-cooled two-stage air compressors. The line includes assemblies for pressure to 175 lbs. and displacement from 5 to 40 cfm. Tank capacity ranges from 6 to 80 gals., input is 1 to 10 horsepower.

The smaller assemblies employ thin copper tube intercoolers and aftercoolers located in the air stream from the fan equipped drive sheave. The larger units employ finned cast fittings to cool the air between stages and prior to delivery into the storage tank. New oiling equipment operates when the level is low and prevents over-oiling when the level is high. Heads and cylinder blocks are removable separately for access to the cylinders. Timken roller bearings with external adjustments support the crankshaft in the improved assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1434 If you write the maker

move!

SOAP
SAWDUST
ORE
FERTILIZER
CONCRETE
VEGETABLES
CHIPPED ICE
MEAT
WOOD CHIPS
CANDY
STEEL CHIPS
COAL
FACE POWDER

...and countless other "granulars" with CLEVELAND Type F Air Vibrators

Catalog No. 105 will give you further details

THE CLEVELAND VIBRATOR COMPANY
2745 Clinton Ave. · Cleveland 13, Ohio

BREVITY—Identify by IEN - 1435 If you write the maker

OTC REPLACE 29 SIZES WITH THESE TWO

NEW GIANT ALLOY adjustable wrenches

THINNER-LIGHTER-STRONGER

Until now 29 wrenches have been needed to handle the jobs done by these two new alloy adjustable wrenches. They are THIN—to get at the work easily. Strong—designed for added strength at leverage points. Light—to make job servicing easy. Economical—saves time, tools and materials. Large jobs become simple ones.

Giant alloy wrench No. OA-24 is 24" long, ⅞" thick, weighs only 10 lbs. and adjusts to 13 standard sizes from 1⅛" to 2⅞". OA-36 is 35" long, 1⅛" thick, weighs only 22 lbs. and adjusts to 16 standard sizes from 2 15/16" to 4¼".

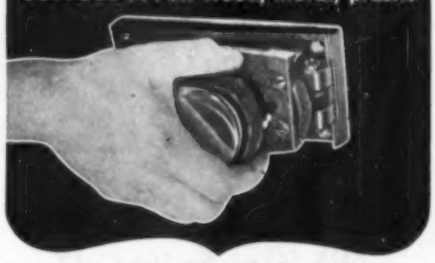
REPLACE 29 SIZES PATENT APPLIED FOR

ANOTHER EXAMPLE OF ENGINEERING THAT MAKES OTC TOOLS OUTSTANDING

OWATONNA TOOL CO.
371 CEDAR ST., OWATONNA, MINNESOTA

BREVITY—Identify by IEN - 1436 If you write the maker

For a perfect, mirror-smooth surface . . . on wood, metal, plastic



there's a Sundstrand Straight-Line Action Air Sander for every job . . .

Whether it's fine furniture work, polishing glass or plastic, refinishing machinery, cleaning vats and bins or any other sanding or rubbing operation—you'll do it faster, easier, better with a Sundstrand. Famous Sundstrand *Straight-Line Action* leaves no swirls, no pressure marks! Four models—single or double pad, in weights from 5½ to 50 pounds to match your specific job requirements. Write for facts today.

SUNDSTRAND

SUNDSTRAND AIR SANDERS
SUNDSTRAND MACHINE TOOL CO.
PNEUMATIC DIVISION, ROCKFORD, ILLINOIS

BREVITY—Identify by IEN - 1437 If you write the maker

you save 50% in TANK HEATING and COOLING with PLATECOIL

★ You SAVE 50% in tank SPACE
★ You SAVE up to 50% in initial COST
★ You have 50% LESS WEIGHT to handle
★ You SAVE 50% in maintenance LABOR as plates are changed from outside the tank without dumping solution

. . . besides all these you get faster heating or cooling. Take advantage of the engineering assistance offered by Kold-Hold to help you with your heat transfer problems.

Send for complete technical manual and descriptive Bulletin No. P56.

PLATECOIL
KOLD-HOLD MFG. CO.
LANSING 1, MICHIGAN

BREVITY—Identify by IEN - 1438 if you write the maker

TUF-STUF'S
best proving ground is in the air!

It pays to specify TUF-STUF aluminum bronze alloys for parts that must stand up

Because they are both light and tough, TUF-STUF aluminum bronze alloys have proven invaluable in America's aircraft as valve-seat inserts, spark plug inserts, valve guides, gears and other vital parts.

If your product requires machined parts that are strong but light, resistant to corrosion, long wearing and resistant to oxidation even at high temperatures, then TUF-STUF is the right alloy for the job.

TUF-STUF alloys are furnished in the form of forgings, rods and screw machine parts. They fill Federal Specification QQ-B-666, Grade B, and several other variations. Because of the increased use and demand for both aluminum and copper, jobs carrying a Defense Order Number are receiving first consideration. 58

MUELLER BRASS CO., PORT HURON 27, MICH.

BREVITY—Identify by IEN - 1439 if you write the maker

THE Doyle VAC-IT
INDUSTRIAL - COMMERCIAL
VACUUM CLEANERS

Regardless of the type of business in which you are engaged . . . YOU CAN PROFIT by using the DOYLE VAC-IT. Let our new, illustrated bulletin help you determine how the Doyle Vacuum Cleaner can be of service to you. Complete information is supplied, including details of various models and a list of many users. Send today for your FREE COPY.

Doyle VAC-IT
DOYLE VACUUM CLEANER CO., 2235 Stevens St., S. W., Grand Rapids 7, Mich.

BREVITY—Identify by IEN - 1440 if you write the maker

Try this BRONZE BAR STOCK...for

Faster Delivery ...Lower Cost!

N-B-M "Tiger" Bronze stocks are conveniently located for prompt delivery—at prices that will help cut costs in your plant or product.

If you're looking for better bronze at lower costs, get all the facts now on what more and more shop men are using—N-B-M "Tiger" Bronze. It's wear-resistant . . . anti-frictional . . . shock-resistant . . . embeddable . . . easy to machine . . . It has everything you want for longer, lower cost bearing service. Try N-B-M "Tiger" Bronze on your next order. Write today for quotations.

ASK FOR THIS FREE BOOKLET...
It describes "Tiger" Bronze characteristics . . . lists stock sizes . . . illustrates the 6 available bar types. It's packed with useful data.

NBM
AMERICAN Brake Shoe COMPANY
NATIONAL BEARING DIVISION
PLANTS IN ST. LOUIS, MO. • MEADVILLE, PA. • BILES, OHIO • PORTSMOUTH, VA. • ST. PAUL, MINN. • CHICAGO, ILL.

NEWS NOTES—Concluded
"Book of design data on springs"

BREVITY—Identify by IEN - 1441 if you write the maker

SPRINGS . . Book of design data includes 11 pages of load-deflection tables

Accurate Spring Mfg. Co.
3809-13 W. Lake St., Chicago 24, Ill.

Revised edition is announced for the company's "Handbook of Technical Data on Springs." The 40-page book describes factors in spring design, design formulation procedure, conversion formulae for end types, how to specify includes compression, extension, torsion springs.

BREVITY—Identify by IEN - 1442 if you write the maker

STAMPINGS . . Dimensioned drawings in bulletin show stampings the company makes

Kickhaefer Mfg. Co.
899-903 S. 2nd St., Milwaukee 4, Wis.

Seventh Edition of "Stampings and Dies" is a 46-page assembly of data sheets on stampings which the company is prepared to make without die charges. Dimensioned drawings and tables cover tube and wiring clamps, brackets, angles, hole plugs, covers, plates, lockwashers, oil slingers.

BREVITY—Identify by IEN - 1443 if you write the maker

TIMING . . Product design suggestions in new catalog on small synchronous timing motors

Hansen Mfg. Co.
1932-36 Virgil Blvd., Princeton 10, Ind.

Captioned cut-away view shows basic construction points of the company's timing motor at the start of new 24-page Catalog 50. Engineering data are presented on standard models from 1 to 600 rpm. along with suggestions on incorporating them into other products and on how to order.

BREVITY—Identify by IEN - 1444 if you write the maker

WELDING . . Specification chart on about 100 alloys for welding, brazing

Eutectic Welding Alloys Corp.
38-42 Worth St., New York 13, N. Y.

"Welding Alloys Chart," six pages, folds to fit a standard 8½ by 11-in. looseleaf binder or unfolds for wall use. It tabulates information on the company's alloys, grouped by application or type of metal, and classified within each group by method of application. There are two selection tables.

BREVITY—Identify by IEN - 1445 if you write the maker

WELDING . . Operating description on equipment for argon metal arc welding

Linde Air Products Co.
30 E. 42nd St., Room 308, New York 17, N. Y.

Equipment requirements are listed in new 6-page Bulletin F-7416-A for argon metal arc welding along with procedures for machine and hand operation. Work range, types of metals, welding speeds, general features are covered.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1446 if you write the maker

NP PRE-ENGINEERED Pneumatic DOOR OPERATORS

- Speed material handling
- Isolate dust and fumes
- Isolate fire hazards
- Reduce cost of air conditioning and heat

Powered by the air engine that operates the car doors of the world's subways

Write for bulletin DC-102

NATIONAL PNEUMATIC CO., INC.
Boston • Graybar Bldg., New York • Chicago

BREVITY—Identify by IEN - 1447 if you write the maker

Left—Style 14500 R Suspended Head Bag Closing Machine. Hang it up any place!

NOW! EFFICIENT BAG CLOSING FOR SMALL PLANTS

HERE is the popular, economical Union Special Suspended Head Bag Closing Machine that offers many plants an excellent solution for handling varying volumes of work. Check these features: Easily installed anywhere in your plant with overhead pulley and counterweight or top balancer! Built-in motor, thumb-controlled clutch, and automatic brake! Plug it in and go to work! Adaptable to fabric or paper bags of various sizes!

SEND FOR THIS NEW BULLETIN!

Get your copy of this 16 page illustrated bulletin containing helpful data and charts on the complete Union Special line of bag closing machines. UNION SPECIAL MACHINE COMPANY, 410 N. Franklin St., Chicago 10, Ill.

UNION SPECIAL

BREVITY—Identify by IEN - 1448 if you write the maker

INCREASE PRODUCTION with Commander PRODUCTION TOOLS

Adjustable MULTI-DRILL
★ Drills Up to 8 Holes At 1 Stroke
★ Adjustable to Any Hole Pattern
★ Fits Any Drill Press

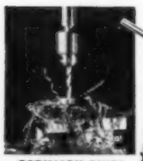
You can drill 2 to 8 holes at one stroke of a MULTI-DRILL equipped drill press. Instantly and easily adjusted to any hole pattern . . . compact in design and ruggedly built for years of service, thousands of MULTI-DRILLS are cutting costs and increasing output up to 800% wherever metal, wood or plastics are drilled.

Commander TAPPER

The Tapper that "Thinks for the Operator"

★ 1 Tapper Handles Taps #0 to ¾"
★ Automatically Sensitive... Any Operator Can Do Precision Tapping
★ Fits ANY Drill Press

Commander Tappers "think for the operator"—automatically stop when taps are dull, overloaded, or when they strike bottom in blind hole tapping—permit faster tapping, better work, even with inexperienced operators. Torque control provides positive tap protection from #0 to ¾" . . . spring clutch eliminates slippage, assures smooth, quiet, easy operation.



ORDINARY CHIPS

New DRILL CHIP BREAKER

Get these COMMANDER DRILL CHIP BREAKER benefits now:

- Faster Drilling
- Deeper Holes
- Better Holes
- Longer Drill Life
- Safer, Cleaner Work
- REDUCED DRILLING COSTS

CHIP BREAKER CHIPS

Write for illustrated Circulars on Commander Production Tools. Your nearby Commander Distributor carries the full line—write for his name.

Commander MFG. CO.
4219 W. KINZIE ST. • CHICAGO 24, ILL.

BREVITY—Identify by IEN - 1450 if you write the maker

...IN THE PRODUCTS YOU BUILD

Manufacturers-equip your products with the finest floats available—*Stainless Steel Floats* from Chicago Float Works. Your product can have no better assurance of long trouble-free float performance. You get all of the plus values of *Stainless Steel* along with Chicago Float Work's more than thirty years of specialized experience in engineering and building floats for industry.

....check these features

CORROSION RESISTANCE. *Stainless Steel* stands up better under severe services in many different kinds of corrosive fluids.

EXTREME STRENGTH. Will withstand pressures up 1000 lbs. Temperatures to 800° F.

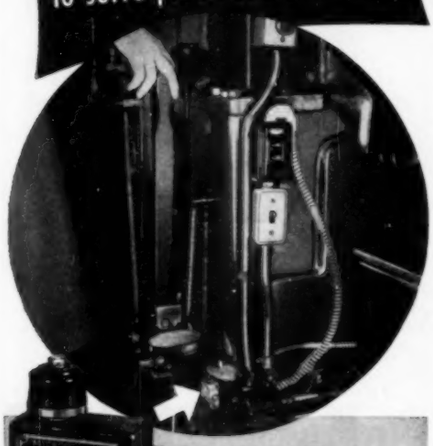
LIGHTER. Less weight affords more buoyancy making for more positive float action.

COMPLETE LINE. Diameters 3 to 10 in. Special sizes to order—standard or special float connections. Write for catalog giving sizes, shapes, spud connections, and complete engineering data.

CHICAGO FLOAT WORKS, INC.
2326 S. Western Ave., Chicago 8, Illinois

BREVITY—Identify by IEN - 1451 if you write the maker

Use MICRO Precision Switches to solve production problems!



This switch prevents shearing of clutch pins on high-speed dieing machine

Installed under the clutch foot pedal of this high-speed dieing machine, this MICRO precision switch automatically causes the drive to return to slow speed when the clutch lever stops the ram motion. Connected in parallel with the "slow" button of the variable speed control, it eliminates chance of starting the ram with drive at high speed, shearing the clutch pin.

SEND FOR "MICRO TIPS"

Send for "MICRO TIPS" for more practical, time-saving ideas discovered by plant production men who have found MICRO precision switches the way to production short cuts. MICRO SWITCH distributors with complete stocks are located in over 100 cities to serve you. Look in your classified phone book.

MICRO SWITCH

MICRO . . . first name in precision switches

MICRO Precision Switches

A Division of Minneapolis-Honeywell Regulator Company

Copr. 1951 Minneapolis-Honeywell Regulator Co.

BREVITY—Identify by IEN - 1453 if you write the maker

CLEANING . . Fountain brush connects through handle to water hose

Source: FULLER BRUSH CO.
3578-82 Main St., Hartford 2, Conn.

Oblong and round designs are available in this new fountain brush which assembles on a pipe handle measuring 5 ft. in length. The handle can be fitted with a 2½ ft. extension. In either case it carries a removable shutoff valve with a hose connection. The brush head is enclosed in a rubber bumper and is filled with a mixture of nylon and horsehair bristles.

BREVITY—Identify by IEN - 1454 if you write the maker

PLATING . . Lead alloy anode for chromium plating contains some tin

Source: DIVISION LEAD CO.
834-38 W. Kinzie St., Chicago 22, Ill.

Anodes in stock to ship quickly

New design in the company's lead-alloy anode, previously described IEN-11104, protects the anode hook from chromic-acid fumes, dragout dripping and spray by coating it with a corrosion-proof plastic material known as Black Armor. The coating materially increases the service life of the copper hook. The design applies to the 71-point anode.

BREVITY—Identify by IEN - 1455 if you write the maker

CLEANING . . Cream type material for hands and arms, no water required

Source: KALENE CORP.
104-8 Portland Ave., Minneapolis, Minn.

Dirt, grime, stains are loosened from a worker's hands and arms by application of a small amount of the company's new hand cream. The loosened matter can be wiped off with a paper towel or cloth without using any water. Lanolin in the cream softens the skin.

Packaging is in bulk drums with a hand pump and plastic hose to fill and refill the wall-mounting dispenser that is supplied with the cream. A gage in the dispenser shows the amount remaining at any time. Dispensers can be distributed through a plant for use in locations near work stations since they are independent of any water supply. Pressing a plunger delivers the cream.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1456 if you write the maker

THIS revolutionary air cylinder is a complete power unit in itself. Four-way directional valve, with an operating lever adjustable to work from any angle in any plane, and separate speed controls for advance and retract strokes, are integral with the cylinder itself. This compact "controlled-air-power" unit requires only one air connection which can be flexible hose. Available in 1⅛", 1¾", 2½", 3⅝" and 4½" bores. Any stroke length.

Known as the Bellows Air Motor, this modern version of air cylinder power makes air safer, easier and simpler to use. Helps in a hundred ways to get more production at lower cost.

• *Write today for your free copy of the new 30-page bulletin "Faster, Safer, Better Production". Address The Bellows Co., Dept. IEN-851 222 W. Market St., Akron 9, Ohio.*

1198

The Bellows Co.
Akron 9, Ohio

BREVITY—Identify by IEN - 1457 if you write the maker

TANKS CLEANED WITH VACUUM

This illustration, obtained by pointing the camera through the manhole of a large tank, shows how plastic lined tanks are cleaned with the Spencer 1½ HP portable just before delivery. The Spencer Portable can be rolled to the work. The dirt can is on casters and can be emptied in a few seconds.

Spencer equipment is also used to remove liquids from tanks, and to provide pressures for tank testing.

356-P

150 USES FOR VACUUM . . . ASK FOR BULLETIN
THE SPENCER TURBINE COMPANY • HARTFORD 6, CONNECTICUT
SPENCER HARTFORD

BREVITY—Identify by IEN - 1458 if you write the maker

CASTELL
LOCKTITE HOLDER
AND IMPORTED LEAD
—the "team" that simplifies your drawing and designing

REFILL DRAWING PENCIL
(black or colored)

Patented clutch holds lead in grip of iron. With push-button release, your fingers never touch the lead. Prevents slipping, smearing, smudging.

No. 9030 CASTELL REFILL IMPORTED Drawing Leads Degrees 7B to 9H

Perfect for LOCKTITE and usable in all other standard holders. Also available in red, blue, green, yellow, carmine, orange, white and silver.

AW FABER-CASTELL PENCIL COMPANY INC.

BREVITY—Identify by IEN - 1459 if you write the maker

A RELIEF VALVE *can not* keep a tank from EXPLODING! but *YOU* CAN!

CORRECT INSTALLATION *is all-important*

That is why long hours of research are conducted in the CASH-ACME Engineering Laboratory to determine the BEST installation for relief valves. Each CASH-ACME Relief Valve you buy, comes with complete INSTALLATION INSTRUCTIONS based on the findings of this laboratory. Follow them closely to make sure that YOUR installations are the best.

TYPE FM-71 CASH-ACME Relief Valve, A. S. A. and Underwriters' approved.

Sold ONLY through Plumbing and Heating Wholesalers. See them . . . ask for—

Write for your free copy of our new 1951 Catalog for complete details on CASH-ACME Products.

CASH-ACME Automatic Valves
A.W. CASH VALVE MANUFACTURING CORPORATION
6612 East Wabash Avenue, Decatur, Illinois, U. S. A.

BREVITY—Identify by IEN - 1460 if you write the maker

WISSCO BELTS

for dependable performance from freezing to brazing

Whether it's sub-zero food processing or high-temperature cop per brazing—or in numerous in-between applications—Wissco Metal Processing Belts carry the product safely, dependably, more efficiently.

Write for illustrated catalog MS-600 describing the adaptability and cost-cutting advantages of Wissco Belts—with or without chain edge—in the processing of foodstuffs, metals, glass, ceramics, veneers, textiles, rubber and numerous other products.

WISSCO METAL PROCESSING BELTS CF&I

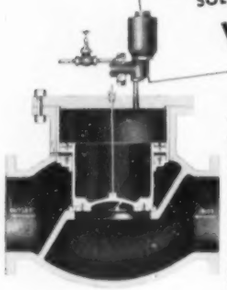
A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION

Sales Office and Plant—56 Sterling Street, Clinton, Massachusetts
Executive Office—500 Fifth Avenue, New York 18, New York
Sales Offices—Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • New York • Philadelphia
Pacific Coast—The California Wire Cloth Corporation, Oakland 6, California

BREVITY—Identify by IEN - 1461 if you write the maker

For dependable Trouble-Free Remote Control Operation

GOLDEN-ANDERSON *Cushioned* SOLENOID-OPERATED VALVES



FOR WATER, OIL OR LIQUIDS

These automatic valves provide full pipe line area when open, are drop tight when closed, permit adjustable closing speed, and are cushioned to prevent hammer or shock. Golden-Anderson electrically operated service valves have proven their greater efficiency and all-around dependability in many of the largest industrial plants of America.

Let our experienced engineers help you on your next pressure control problem. Technical data on request.

GOLDEN ANDERSON Valve Specialty Company
2079 KEENAN BUILDING • PITTSBURGH 22, PA.

BREVITY—Identify by IEN - 1462 if you write the maker

TWO WAYS WE CAN HELP YOU!

1. Cut your Designing Cost
2. Cut your Tooling Cost

1. A complete set of Tracing Templates is available on Morton Standardized Fixture Details. Select the Clamp that fits your need . . trace it into your design.
2. Largest assortment of Clamps in the business. You'll find a Morton Clamp to do your job. Save valuable fixture designing time. Standardize with Morton.

Write today for FREE Morton Catalog, including complete set of Morton Clamp Tracing Templates.

MORTON MACHINE WORKS
2431 Wolcott St. Detroit 20, Michigan

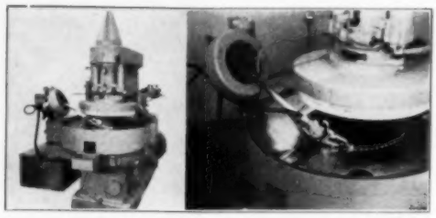
MORTON "Get More with Morton"

Fixture Clamps
and Standard Fixture Details

BREVITY—Identify by IEN - 1463 if you write the maker

LAPPING . . Hopper feed attachment minimizes handling of small flat work

Source: NORTON CO.
36 New Bond St., Worcester 6, Mass.



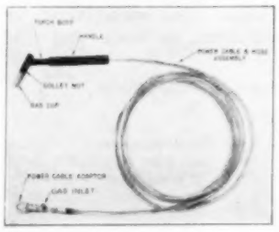
The illustration shows one of the company's No. 26 Hydrolap machines equipped with a magazine feed attachment that orients small flat work pieces so they will move right-side-up down a spiral trough for deposit one at a time in a continuous single file in depressions in the rotating machine table. The table carries them around between the opposed upper and lower rotating laps in a path that leads from the outer rim of the laps to the inner rim and back again. They emerge from between the laps to register with a discharge hole into which they drop just ahead of the loading station.

The equipment makes the machine automatic and continuous in its operation between lap-dressing intervals. High production can be maintained without sacrifice in accuracy or finish. Handling time is minimized and machine attendance calls only for an unskilled operator who can keep the hopper filled and remove boxes of finished work. Automatic devices stop the machine in the event of faulty loading.

BREVITY—Identify by IEN - 1464 if you write the maker

WELDING . . Gas shielded arc torch, air cooled, to weld thin sheet metals

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.



Type HW-9 is a new two-position arc-welding torch that applies a tungsten electrode, surrounds the arc with inert gas and takes its power from a straight-polarity dc. generator or an ac. power source providing stabilized high frequency. A chuck takes interchangeable collets for .020, .040 and .0625-in. electrodes. The power line and the inert gas both feed through a transparent tube measuring 12½ ft. in standard length. A 24-ft. length can be specified as an accessory. Maximum current is 75 amp. on continuous duty.

For normal use the torch head stands at a 120-deg. downward angle with the handle. This angle can be changed to 60 deg. backward by interchanging the collet nut and torch cap. The assembly then permits making welds in confined locations otherwise inaccessible. The torch body is sheathed in nylon to insulate against electrical shock. The nut carries an insulating molded-plastic shield. Two caps are available to apply electrodes measuring 3 or 7 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1465 if you write the maker

CUTS GRIME FROM FLOORS

TENNANT FLOOR MACHINE

IN JUST 2 HOURS one man—with a TENNANT "K" Industrial Floor Machine—removed this ¼" thick granite-hard blanket of dried paint. The job *previously took 12 to 16 hours* of tedious labor with air-hammer and hand-scraper.

BIG, RUGGED, POWERFUL, this machine makes *any* floor cleaning job easy. Fast Revo-tool removes dirt, grease, metal chips—even concrete! **Write Today for Details!**

16" REVO-TOOL has 336 cutters for tough jobs.

G. H. TENNANT CO.
2574 2nd St. N., Minneapolis 11

TENNANT

BREVITY—Identify by IEN - 1466 if you write the maker

UPTEGRAFF DISTRIBUTION TRANSFORMERS

Dry types or Liquid immersed

1½ to 500 KVA · Prompt Delivery

Large Uptegraff Distribution Transformer, with radiators and enclosed junction boxes. Can be furnished oil or askarel immersed.

Typical pole-mounted Uptegraff Transformer. Unit shown is self-protecting, 25 KVA.

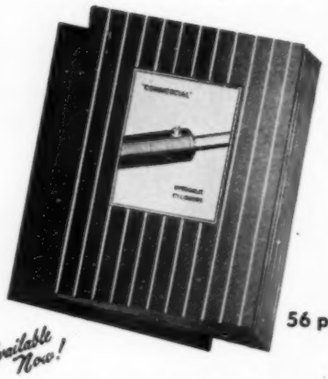
Uptegraff Dry-Type Distribution Transformers include sizes up to 500 KVA. Light in weight, easy to install, dependable.

Uptegraff makes a complete line of transformers for industrial and utility service. Types include: Distribution, Power, Instrument, Specialty. Sizes up to 10,000 KVA.

R. E. UPTEGRAFF MANUFACTURING CO.
THOMAS STREET . . . . SCOTTDALE, PENNSYLVANIA
Makers of Power · Distribution · Instrument · Specialty Transformers

BREVITY—Identify by IEN - 1467 if you write the maker

FOR THE FIRST TIME



56 pages

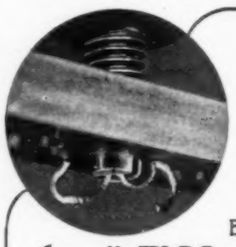
Available Now!

To PRODUCT DESIGNERS who can profit by using OIL HYDRAULIC CYLINDERS in their equipment.

Ask for catalog H-3

The COMMERCIAL SHEARING & STAMPING COMPANY
Youngstown 1, Ohio

BREVITY—Identify by IEN - 1468 if you write the maker



HOLTITE TAP SCREW

Eliminates Tapping! Fastens Any Material Better—At Less Cost!

Actually TAPS its own threads

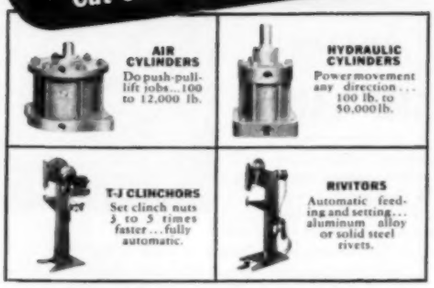
Save tapping time and cost — tap and fasten in ONE operation with this new economy "TAP" screw that actually cuts its own perfect mating threads in any material. The slot in point, corresponding to flutes of a tap, provides two balanced cutting edges and chip reservoir which cut perfect mating threads for stronger vibration-resisting fastenings with easy chip clearance. Specify "TAP" screws and save!

U. S. Pat. No. 2,292,195. Other Patents Pending.

CONTINENTAL SCREW CO. New Bedford, Mass., U.S.A.

BREVITY—Identify by IEN - 1469 If you write the maker

Get T-J for TOUGH JOBS
Cut Costs . . . Save Labor!



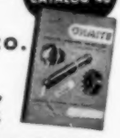
Put T-J to work in your plant—*cut costs* and *save labor!* For "muscle jobs" of pushing, pulling or lifting—100 lb. or 50,000 lb.—T-J Air and Hydraulic Cylinders. For high production setting of rivets or clinch nuts . . . T-J Rivitors, T-J Clinchors. For more work between grinds in tough die steel . . . T-J Cutters. Precision-built with 34 years' experience. Send for catalogs. The Tomkins-Johnson Co., Jackson, Mich.

T-J
TOMKINS-JOHNSON
RIVITORS · AIR AND HYDRAULIC CYLINDERS · CUTTERS · CLINCHORS

BREVITY—Identify by IEN - 1470 If you write the maker

The most complete line of wire-wound resistors—the Ohmite line! In addition to the types shown, Ohmite resistors come in more than 60 core sizes—a wide range of wattages and resistance values. Let experienced Ohmite engineers help you select *just* the right resistor for your needs.

Write ON COMPANY LETTERHEAD for CATALOG 40



OHMITE MANUFACTURING CO.
4813 Flournoy St., Chicago 44, Ill.

Be Right with
OHMITE®
RHEOSTATS · RESISTORS · TAP SWITCHES

BREVITY—Identify by IEN - 1472 If you write the maker

GAGE . . Optically flat discs and plates made of ceramic material

Source: AMERICAN LAVA CORP.
50 Cherokee Blvd., Chattanooga 5, Tenn.

Sizes are to 9 in. in diameter, or equivalent rectangle, in a new line of optically-flat Alsimag ceramic discs and plates. The material is very hard, permanently rigid, resistant to thermal shock, suited for use at elevated temperatures, resistant to attack by alkalis and by acids except hydrofluoric. The three large pieces in the illustration are accurately flat within .0000232 inch. Test samples can be produced quickly and at reasonable cost to specification.

BREVITY—Identify by IEN - 1473 If you write the maker

CASTINGS . . Made of two metals cast in sequence in centrifugal mold

Source: UNITED STATES PIPE & FOUNDRY CO.
50 Thomas St., East Burlington, N. J.

Company will help with design work

Dual Metal trade names recently expanded process in which the company is prepared to produce rolls made with an outer shell of chilled iron and inner core of gray iron. Other rolls employing an outer shell of stainless steel can be specified also. Each metal is melted in an individual furnace and the outside metal is poured into the spinning mold. Then the second metal is poured without stopping the rotation.

Applications include manufacture of rolls for flour milling, textile equipment and paper-making machines. Cylinder liners for diesel engines constitute an application employing gray or alloy iron inside steel. Sizes range from 4 to 30 in. in outside diameter, length to 10 ft. and wall thickness in any desired amount from ½ inch.

BREVITY—Identify by IEN - 1474 If you write the maker

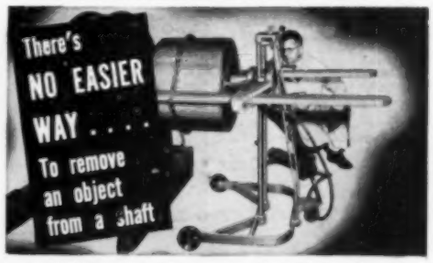
MARKING . . Steel stamp holder for use in a press on curved surfaces

Source: M. E. CUNNINGHAM CO.
99 E. Carson St., Pittsburgh 19, Pa.

Model PPH-10 designates new steel type holder for application in a press to impress marking into work with curved surfaces. The holder is supplied for specified requirements to fit a given press and to use standard straight-sided type pieces. A removable plastic side plate holds the type in place and compensates for slight variation in the type bodies.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1475 If you write the maker



The New, Improved Hydraulic
PULLEY PULLER

Enables one man to remove a pulley, gear, pinion, or other object from a shaft in minutes! No crow bars, sledges, or blow torches. No damage. Puller is adjustable, easily moved, rugged. Hundreds now in use in industry.

5-ton size **$62.50**
★
20-ton size **$290.00**
★
50-ton size **$655.00**
(F.O.B. Factory)

Write for complete information — Catalog A

INDUSTRIAL ENGINEERING EQUIPMENT CO.
122-124 E. 4th St. Davenport, Iowa

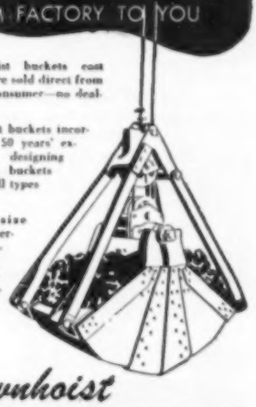
BREVITY—Identify by IEN - 1476 If you write the maker

Buy a Better Bucket
FOR LESS MONEY
Buy Brownhoist
DIRECT FROM FACTORY TO YOU

• Brownhoist buckets cost less—they are sold direct from factory to consumer—no dealer profits.

• Brownhoist buckets incorporate over 50 years' experience in designing and building buckets for handling all types of materials.

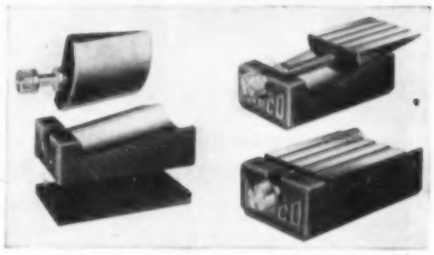
• Standard size rope-reeve, power-wheel and link-type Brownhoist buckets are available for immediate shipment.



Brownhoist
Write for illustrated catalog of Brownhoist Buckets
INDUSTRIAL BROWNHOIST CORPORATION
139 Washington Ave., Bay City, Michigan.

BREVITY—Identify by IEN - 1477 If you write the maker

Machine Leveler Features Vibration Absorbing Pads



Saves time on installation and periodical re-leveling adjustments

Something new in a machine leveling jack is this Empco Jack, featuring vibration absorbing mounting pads. The pads are of a new vibration absorbing material developed for use under heavy loads to eliminate creepage and reduce machine maintenance costs due to vibration.

Company officials stated that one model with ¼" thick pad under a load of 92½ pounds per square inch has reduced vibration 43 percent, while another model, with ¼" thick pad reduced vibration 74 percent.

Lower in design, 2" high, 6" long and 3½" wide, the new jack's self-aligning feature has been improved by compensating for more uneveness of floor while retaining full bearing of lifting surfaces up to a maximum height of adjustment.

Direct your inquiry to Enterprise Machine Parts Corporation, 2731 Jerome Ave., Detroit 12, Mich.

BREVITY—Identify by IEN - 1478 If you write the maker

18 Solder Joints-1¢

THIS EXAMPLE is typical of users' reports on hundreds of jobs using Allis-Chalmers Induction Heaters. In case after case, production proved faster and cheaper with Allis-Chalmers Induction Heaters.

Best of all, these units are highly versatile! The same heater can braze, solder, anneal, case and through harden by simply changing the work coil. Work coils are easy to install. When coils are changed, there's no need for additional output transformers (needed on most units) which require special shielding and skilled help to install.

Call your nearby Allis-Chalmers Sales Office and find out what Induction Heat—the A-C way—can do to your production costs. Send for booklet 6430A.

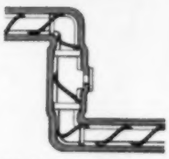
ALLIS-CHALMERS, 909A SO. 70 ST. MILWAUKEE, WIS.

A-3202

ALLIS-CHALMERS A-C

BREVITY—Identify by IEN - 1479 if you write the maker

To speed production of viscous materials such as plastics, asphalt, oils, molasses—**to avoid costly repair bills** caused by frozen and burst water pipes and valves, install G-E heating cable or Calrod tubular heaters now. Wrapped around or clamped parallel to pipes, they do an economical, efficient job and can be thermostatically controlled for automatic operation.



G-E Calrod tubular heaters and heating cable can be wrapped around

FOR FREE CATALOG, GEC-1005A, and application bulletin, "Heating Pipelines," GEA-5095, write to *Sect. 720-26, Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

or clamped parallel to pipes to prevent freezing and to keep viscous fluids free-flowing

*Reg. Trademark of General Electric Company

GENERAL ELECTRIC

BREVITY—Identify by IEN - 1480 if you write the maker

FAN

FACTS FOR '51

...are yours in the NEW EMERSON-ELECTRIC FAN CATALOG!

Get the Facts...see for yourself the advantages of selecting your fan equipment for 1951 from the most complete line of quality fans in America. Write for Catalog No. 210 today.

THE EMERSON ELECTRIC MFG. CO.
St. Louis 21, Mo.

EMERSON ELECTRIC
MOTORS • FANS APPLIANCES

BREVITY—Identify by IEN - 1481 if you write the maker

Smooth Traffic SAVES Time . . . . . MONEY!

The smooth flow of materials in your factory, warehouse, store, really rings the cash register . . . and no matter what your *traffic problem* is, we have the right kind of package conveyor equipment — belt, roller, chain — to handle it most efficiently.

For the whole story, MAIL THE COUPON.

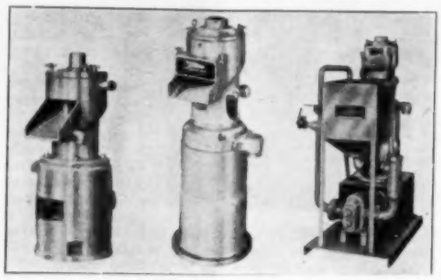
CONVEYOR SPECIALTY COMPANY INC.
35 Newport Ave.
North Quincy 71, Mass.

Please mail me your Conveyor Catalog.
Name_____
Company_____
Address_____
_____

BREVITY—Identify by IEN - 1482 if you write the maker

PROCESSING . . Abrasive machines to mill metallic-soap lubricants

Source: MOREHOUSE INDUSTRIES
1154-58 San Fernando Road, Los Angeles 65, Calif.



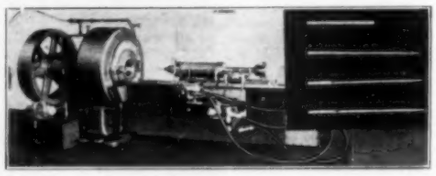
Three new machines have been added to the company's line of milling equipment in which a material to be processed is passed through a small adjustable space between stationary and rapidly revolving stones. The three are Model MG, to the left, for laboratory use and custom runs, Model B-1405 with milling capacity to 8,000 lb. per hr. and the same machine with a deaerating unit.

Application is primarily on greases containing metallic-soap bases and other solid additives. Excellent dispersing action results from passage between the two stones.

BREVITY—Identify by IEN - 1483 if you write the maker

SWAGING . . Hydraulic feed machine produces spindles for textile machine

Source: FENN MFG. CO.
1839-43 Broad St., Hartford 1, Conn.



New machine starts with a blank measuring ⅛ by 4½ in. made of Type 52100 SAE steel and having initial hardness of 90 on the Rockwell B scale. The blank is secured in a hydraulic feed head and is moved by it into the swaging head in which is an initial set of dies. These dies reduce diameter on a portion of the blank to ⅜ in. and nearly double the length in a 20-sec. operating interval. The dies are then changed and t..e work is introduced again for a sizing operation that increases length a bit more.

Finally a third set of dies are employed to swage a Morse taper on the shank and bring final length to 9½ inches. The second and third operations require 14 and 6 seconds. Concentricity is held to .004 inch. The dies are oil cooled. No material is lost by machining in production of the spindles.

All Makers of These And All Other Products Are Listed in THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

FIND WHAT YOU WANT?
Try the suggested procedure in the Index, page 102

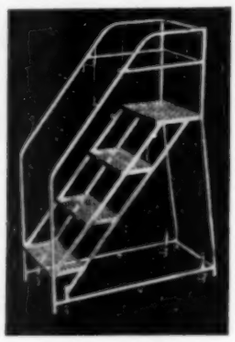
BREVITY—Identify by IEN - 1484 if you write the maker

WHEN you haul with Moto-Bug you have *full power forward and reverse* . . . for traveling 1½ to 4 m.p.h. in either direction . . . for backing up . . . for spotting. There's no pushing, *no pulling*. Operator takes it easy . . . rides on rear step . . . has positive steering wheel for effortless driving. Handy 33" width clears narrow doorways, crowded aisles . . . turns in own length. Simple, standard-make 4 h.p. gasoline engine takes full load up 20% ramps. Carries 10 cu. ft. in big-capacity hopper . . . 1200 lbs. on sturdy 4-ft. flat-bed platform. Fork-lift attachment available. You'll be surprised at the low initial cost . . . Moto-Bug quickly pays for itself with more production per man-hour. Get the facts from your Kwik-Mix distributor, or write us NOW.

KWIK-MIX COMPANY PORT WASHINGTON, WIS. (Koehring Subsidiary)
Also Mfrs. of: CONCRETE • PLASTER • BITUMINOUS MIXERS

BREVITY—Identify by IEN - 1485 if you write the maker

A REALLY *Safe* ROLLING STEP LADDER



Casters carry ladder, but rubber tipped legs "lock" to floor when in use.

High storage is no longer a hazard and pick-up or stock operations can be safely speeded when Ballymore all steel Safety Ladders are used.

Available in one, two, three step models without handrails and three, four and six step models with handrails. Wire baskets, which leave both hands free, are optional.

WRITE TODAY FOR FREE ILLUSTRATED CATALOG

THE BALLYMORE COMPANY Wayne 4, Pa.

BREVITY—Identify by IEN - 1486 if you write the maker

FRICTION PROBLEM? There is a NICE answer!

FROM high quality, close tolerance "ground all over" Precision Ball Bearings. . . .

TO low cost "unground" Ball Bearings of inexpensive design and construction.

Have you any Ball Bearing requirements on which we may quote? For complete information on the Nice Line write for Catalog No. 140.

NICE BALL BEARING COMPANY
NICETOWN PHILADELPHIA PENNSYLVANIA

BREVITY—Identify by IEN - 1487 if you write the maker

Hard to Please?

If you're looking for really fine quality heads, available at the lowest possible price, write or wire us today. Whatever your requirements, we can supply you.

We manufacture all types of multiple spindle, fixed center, adjustable and lead screw tapping heads.

Write Today For 1951 Catalog Dept. B

Two spindle head unit—one spindle fixed, the other spindle adjustable, for the fixed positions.

Universal joint with slip spindle fixed locating plate.

Single eccentric type for equally spaced holes on bolt circles.

US HEADS SINCE 1915

UNITED STATES DRILL HEAD CO.
CINCINNATI 4, OHIO

▼ BREVITY—Identify by IEN - 1488 If you write the maker ▼

The "MASTER" Line
OF MATERIALS HANDLING EQUIPMENT
The Most Complete Line of Materials Handling Equipment on Wheels

Buy the type of machine that fits your job.

Write TODAY for one or more of these new catalogs . . .

(24) Master JackLift Electric Trucks and JackStacker Electric Trucks.
(25) SpaceMaster Electric Fork Trucks.
(26) Master JackLift Trucks, Hydraulic and Mechanical Handlift Trucks, WeldMaster Skid Platforms.
(27) SpaceMaster Gas Fork Trucks.
(28) PowerMaster Stackers, Lifters, Handy Hoisters, Portable Cranes.
(29) FloorMaster Trucks.
(30) ToteMaster Gas Trucks.
(31) LoadMaster Racks for Pallet, Platform, Barrel, Drum, Bin, Unit Loads.

The "MASTER" Line

LEWIS-SHEPARD PRODUCTS INC.
142 Walnut Street, Watertown 72, Massachusetts
Midwest Plant: Crawfordsville, Ind.
Sales & Service in Principal Cities

▼ BREVITY—Identify by IEN - 1489 If you write the maker ▼

Wilshire
REALLY PAYS OFF!

MODEL 1000
Super Heavy Duty with forward and reverse drive, 100% visibility.

CUTS Your SWEEPING COSTS 75%

Let's face it! The hand sweeper can be a grim reaper of your profits...as it has been in hundreds of large and small plants. Their answer?..."The Wilshire Power Sweeper!" It's doubly efficient because its two-way brush and vacuum action picks up everything from cigarette butts to pop bottles in one easy operation. It's doubly economical, too, because one man does the work of a cleanup crew. Make us prove how much the Wilshire Power Sweeper can cut your sweeping costs with a free demonstration on *your* job. Write for full information and dealer nearest you.

MODEL 800 America's favorite Heavy Duty Sweeper with finger-tip dual control. (Sulky optional.)

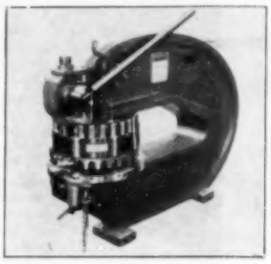
FACTORY TESTED...
90-DAY GUARANTEE

Wilshire
POWER SWEEPER CO.
326 W. Chevy Chase Drive
Glendale 4, Calif.

▼ BREVITY—Identify by IEN - 1491 If you write the maker ▼

PUNCHING . . Turret type machine mounts 18 punches, has 24 in. throat

Source: ROTEX PUNCH CO.
4724-28 E. 12th St., Oakland 6, Calif.



Eighteen punch stations are assembled in the hand-rotated turret on this new Model 18B lever-operated machine. The turret is positioned in the housing for 24 in. of clearance between the active punch center and the back of the throat. Punches and their dies are accurately aligned in the turret but can be rotated independently. A safety lock prevents operation without correct alignment.

Hole size ranges from 5/64 to 2 inches. The machine will punch cardboard, fibreboard, plastics, sheet steel to 10 gage.

▼ BREVITY—Identify by IEN - 1492 If you write the maker ▼

PRINTING . . Transparent negative paper to reproduce tracings, prints

Source: HALOID CO.
47 Haloid St., Rochester 3, N. Y.

Is stable dimensionally

Transparent water-resistant paper is coated with an emulsion featuring contrast and density in this new Transaloid sheet material. It is available in cut sheets from 8 by 10 in. to 30 by 40 in. and in rolls measuring 6 to 40 in. in width.

Applications include making positive prints from diazo reproduction, white prints, tracing reproductions, offset plates, line work and halftones to 133 screen.

▼ BREVITY—Identify by IEN - 1493 If you write the maker ▼

TIMING . . Electric interval unit for photographic darkroom processing

Source: GENERAL ELECTRIC X-RAY CORP.
4855-57 Electric Ave., Milwaukee 14, Wis.

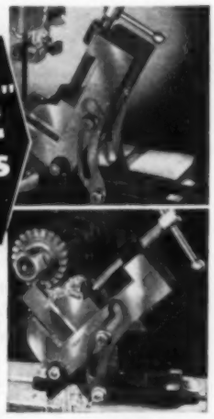
An interval is selected by moving a stop-equipped pointer to desired location of the 40-sec. dial. The timer is then started at this interval by moving the second pointer to contact the stop. The arrangement assists in error-free repeat for the preset interval.

The timer includes a red lamp that glows when an interval is in progress, a timer bell that sounds at the end of the interval and a buzzer that continues to sound until it is shut off. On the side of the gray plastic housing is an electric outlet to plug in appliances or apparatus. Drive for the timing mechanism is by a synchronous motor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—Identify by IEN - 1494 If you write the maker ▼

"YANKEE" ANGLE VISES



● Jig-type SET-UPS in jig time! One set-up for a series of operations, bench or machine. Position the work and set for angle. Securely held. Angle adjustment does not interfere with full capacity of jaw opening. Full 90° scale. Hardened face plates. V-block for holding round stock. Two sizes, 2" and 2¾" jaw widths. Same sizes also available with quick-release swivel base for use on bench. Economical jigs—big savings in tooling for small work.

Order from your industrial distributor. Write for Vise Folder and "Yankee" Tool Book.

"YANKEE" TOOLS NOW PART OF
STANLEY
THE TOOL BOX OF THE WORLD

NORTH BROS. MFG. CO.
Philadelphia 33, Pa.

▼ BREVITY—Identify by IEN - 1495 If you write the maker ▼

Tell Us Your Production Problems . . . We'll Help You Solve Them

"LOGAN" Rotating and Nonrotating AIR CYLINDERS

Fast-Acting, Positive Controlled Power . . At LOW COST

NONROTATING—
7 STANDARD MOUNTING TYPES

Standard sizes from 1½" to 12" bore; maximum stroke, 16 feet. Special models to meet your requirements.

Logan Features — Larger Ports . . . More Sturdy Construction . . . Maximum Power Without Leakage . . . Permanent Seal Around Piston Rod . . . Standard Models Available With or Without Cushioning.

ROTATING—

Two Standard Styles — Model R with cast iron body; Model K with lightweight aluminum body.

Bore diameter 1½" to 20", piston stroke 1" to 2"; longer strokes available as special. American Standard adaptations; simple, efficient design to assure positive, rapid, economical operation.

Logan Manufactures 6,975 Standard Cataloged Items

Free Catalog On Request

AIR CONTROL VALVES CATALOG 100-4
AIR CHUCKS CATALOG 70-1
AIR CYLINDERS CATALOG 100-1
AIR and HYDRAULIC PRESSES CATALOG 300-3, ALSO 80-3
COLLET GRIP TUBE FITTINGS CATALOG 60
HYDRAULIC CONTROL VALVES CATALOG 300-4
HYDRAULIC CYLINDERS CATALOG 300-5, ALSO 80-2
HYDRAULIC POWER UNITS CATALOG 300-1
SURE-FLOW COOLANT PUMPS CATALOG 42

Let Logan Engineers help you design your Air and Hydraulic Circuits.

Logan
Air and Hydraulic Equipment
LOGANSPORT MACHINE CO. INC. 813 Center Ave. Logansport, Ind.

FLUID POWER SPECIALISTS SINCE 1916

▼ BREVITY—Identify by IEN - 1496 If you write the maker ▼

FASTER . . . MORE EFFECTIVE FIRE CONTROL

WITH THE ANSUL Stream Pattern

PATENT PENDING

plus

BETTER HEAT-SHIELD PROTECTION
only Advertise the Nozzle! . . .

. . . because the *nozzle* on your ANSUL Dry Chemical Fire Extinguisher is *water-tight* . . . it *won't* become inoperative due to corrosion or caking of dry chemical within the working parts . . . the most inexperienced man in your plant *can use the ANSUL extinguisher effectively* . . . *and only Ansul has a nozzle* to meet all of these requirements!

If your hazards require special long range straight stream nozzles, you can get Ansul Extinguishers equipped with these nozzles at no extra cost. With Ansul Dry Chemical Fire Extinguishing Equipment you have not only the best fire protection but also a choice of models and designs to meet your requirements.

EXCLUSIVE FEATURES: Water-tight construction • Provides a modified cone-shaped stream pattern without hole in the center of the stream • Each nozzle gas pressure tested after assembly • Special spring loaded packing to insure lasting water-tightness. • Designed for use by inexperienced operators. • Low velocity, more effective stream of dry chemical.

Send for File No. 648. You will receive our catalog, a Periodic Inspection Record Chart, "Fundamentals of Fire Extinguishment" and information about Ansul Dry Chemical Piped Systems for automatic protection.

ANSUL CHEMICAL COMPANY
FIRE EXTINGUISHER DIVISION • MARINETTE, WISCONSIN
DISTRIBUTORS IN ALL PRINCIPAL CITIES IN THE U. S. A. CANADA AND OTHER COUNTRIES

▼ BREVITY—Identify by IEN - 1497 If you write the maker ▼

famco COST CUTTING machines

HIGH IN QUALITY—LOW IN COST

DRILL PRESSES
Best buy in 19" drill presses. Complete line of single and multiple spindle models, bench and floor types. Many exclusive Famco features.

SQUARING SHEARS
In 3 power and 5 foot models. Cutting widths 22" to 52". Capacity up to 16 gauge mild steel. Inexpensive, ruggedly built, many features.

POWER PRESSES
Open-back, inclinable, bench and floor type. Heavy semi-steel, cast iron frame and drop-forged, one-piece crankshafts. Most models; highest quality in small presses.

METAL CUT-OFF BAND SAWS
High quality machine tool made in both dry and wet cutting models. Capacity up to 6" round and 6" x 12" rectangular stock. Many exclusive Famco features.

Other famous Famco equipment includes: Arbor Presses in 32 stock types, delivering up to 15 Tons pressure; and Foot Presses in 10 bench and floor types, rated up to 3½ Tons pressure. The complete Famco line is available through industrial equipment distributors everywhere.

FAMCO MACHINE COMPANY
1303 18TH STREET RACINE, WISCONSIN

BREVITY—Identify by IEN - 1498 If you write the maker

For Dependable, High-Pressure Connections

BLACKBURN Hi-Strength CONNECTORS

High-pressure connections are the best electrical connections. They are also the best mechanical connections because tests show that they have better ability to stay tight—are trouble-free once installed.

All connectors in the famous BLACKBURN Hi-Strength Line produce high pressure connections. Also, they are priced right to give you low cost connections that you can depend upon . . . Be sure to specify BLACKBURN!

SEND FOR CATALOG
JASPER BLACKBURN CORPORATION
25 Madison St. • St. Louis 6, Mo. • CEntral 3007

BREVITY—Identify by IEN - 1499 If you write the maker

BEST FOR EVERY FOLDING CHAIR PURPOSE!

- DURABLE—strong steel frame, reinforced
- SAFE—no tipping, pinching, snagging hazards
- COMFORTABLE—extra-wide, extra-deep seats and backs
- CONVENIENT—fold quietly, quickly, compactly
- RUBBER SHOES—long-life, replaceable
- THREE SEAT STYLES—formed steel; formed plywood; imitation-leather upholstered

OVER EIGHT MILLION IN USE!

WRITE FOR DESCRIPTIONS AND PRICES
American Seating Company
Grand Rapids 2, Michigan
Branch Offices and Distributors in Principal Cities

BREVITY—Identify by IEN - 1500 If you write the maker

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☐ Send FREE 1951 ALLIED Catalog No. 126
Name
Address
City Zone State

BREVITY—Identify by IEN - 1501 If you write the maker

GAGE . . Steel measuring tape, 25 to 100 ft. in covered steel case

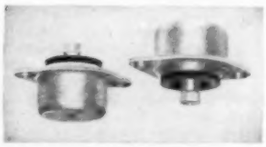
Source: L. S. STARRETT CO.
100 Starrett St., Athol, Mass.

Series 530 is a new line of steel measuring tapes ⅜ in. in tape width that wind into and out of steel cases covered with red colored artificial leather. The tape is available in 25, 50, 75 and 100-ft. lengths with graduations in feet, inches and eighths. Metric graduations can be specified. The ring at the end is fitted with a folding hook so an individual can anchor the tape for unassisted measurements. The graduations show bright on a no-glare black background.

BREVITY—Identify by IEN - 1502 If you write the maker

ISOLATING . . Vibration insulator employs air damped rubber diaphragm

Source: BARRY CORP.
179-P Sidney St., Cambridge 39, Mass.

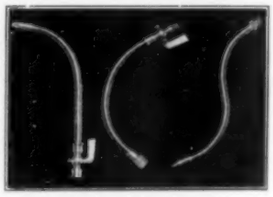


Series 6475 for two-hole mounting on 1.4-in. centers and Series 6695 for four-hole mounting on 1-in. centers are new rubber-diaphragm air-damped vibration insulators with load rating of .3 to 3 pounds per unit. Each presents a load stem with an 8-32 in. threaded hole ¼ in. in depth. Height above the base is ½ inch.

BREVITY—Identify by IEN - 1503 If you write the maker

LUBRICATING . . Coolant spouts for machines, flexible, self-supporting

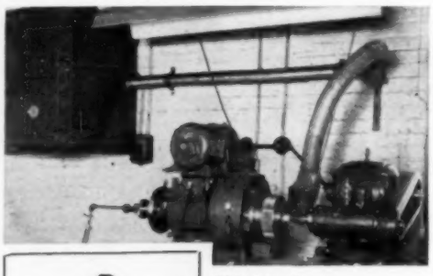
Source: J. N. FAUVER CO.
45 W. Hancock Ave., Detroit 1, Mich.



External support is not required other than connection to a rigid feed line on a machine for this new coolant spout. It is made of flexible tubing in a special construction that makes each unit self-supporting in any position to which it is curved for desired coolant direction. It is fluid tight and is equipped with various combinations of shutoff cock and nozzle. Five sizes have ¼ to ¾-in. bore. The fittings match standard pipe of equivalent size.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1504 If you write the maker



Torit Dust Separators

Torit also manufactures a line of cyclone type dust separators, in sizes ranging up to 5 H. P. Many are designed for indoor recirculation of the filtered air. Above is a Twin Cyclone unit that delivers 2100 c.f.m., velocity 6,000 ft. per min., static pressure, 3".

I'll be hanged . . . if you can't do a better job with

Torit Dust Collectors

Torit Dust Collectors are self-contained units for capturing and cleaning dust laden air from around grinding, polishing, and other dust creating machines.

In the installation above, a Torit Dust Collector is hung from wall brackets. Others have been hung from ceilings, placed under the machine, or tucked in odd corners wherever a bit of space is available.

This compactness means efficiency. Torit Dust Collectors can be set close to machines, minimizing pipeline losses. They can be wired through the same starting switch to eliminate idle running and, as air is recirculated after cleaning, no room heat is lost.

For details and Torit catalog, write:

TORIT Manufacturing Co.
286 Walnut St., St. Paul 2, Minn.

BREVITY—Identify by IEN - 1505 If you write the maker

CASTINGS CLEANED IN ½ THE TIME

ROTOR TOOLS "PAID OFF" IN 6 MONTHS!

● This foundry's production was slipping. Air lines were old—air pressure low. Scale and water in the lines caused high maintenance of air tools. Use of heavy chippers was also causing inspection rejects.

The Rotor Tool Application Engineer recommended that they replace all air grinders with Rotor 360 Cycle Grinders and replace heavy chippers with Rotor Scalers weighing only 3 pounds.

Now production time has been cut in half. These production savings "paid off" the complete high cycle installation in *six months*. The Rotor Scalers cut down inspection rejects and "paid off" in three weeks.

Want to study your methods for similar benefits?

Call in the Rotor Application Engineer or write for Catalogs #34 and #37.

360 CYCLE O'TOOL

THE ROTOR TOOL CO.
CLEVELAND, OHIO

BREVITY—Identify by IEN - 1506 If you write the maker

Our Work Glove RECONDITIONING SERVICE Saves Up To 49% On Costs* . . .

● We pick up your worn, dirty gloves—wash, mend, reshape, pair, package and return them to you at important savings.

Don't scrap canvas, leather palm or other gloves, pads, etc. Let us give you the complete story on this new service.

*Actual experience of a large user who made a careful study.

Representatives in all industrial areas.

U.S. INDUSTRIAL GLOVE CORP.
9354 Roselawn Avenue,
Detroit 4, Michigan
Please send me complete details on your glove RECONDITIONING SERVICE.
Name
Address
City & State

U.S. INDUSTRIAL GLOVE CORP.

BREVITY—Identify by IEN - 1508 if you write the maker

LOW COST

NO MAINTENANCE

LONG LIFE

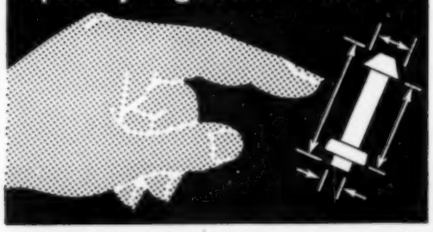
Acme Electric Power Transformers are designed to "keep cool" with free air circulation. No oil, no water, or other coolant to buy. No "safe" transformer vault to build. No routine inspection necessary. Liberally designed for low temperature rise performance. Built for heavy duty service. Available in ratings from 1/10th KVA to 50 KVA.

ACME ELECTRIC CORPORATION
262 WATER STREET CUBA, N. Y.

Acme ACME Electric

BREVITY—Identify by IEN - 1509 if you write the maker

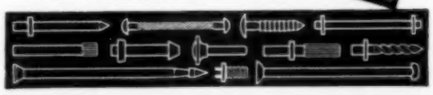
SPECIFY Hassall
specially engineered fasteners



Hassall cold-headed fasteners can improve your products and save you money, even on short runs. Send us your specifications for your nails, rivets and screws... in diameters from 1/32" to 3/8"... lengths to 7"... in any workable metal... in practically any finish. Your inquiry will be handled promptly. Ask for free catalog.

JOHN HASSALL INC.
132 Clay St., Brooklyn 22, New York

Hassall



BREVITY—Identify by IEN - 1510 if you write the maker

NEW-and Real News!

a genuine MAGNAFLUX* portable INSPECTION UNIT for $485 complete

Locates surface and sub-surface defects in shafts, drives, links, etc. by magnetic particle inspection

Offers big savings by making maintenance and safety inspection positive—preventing production stoppages before they happen. No other unit under $1400 approaches its sensitivity! Built by the pioneers and originators of magnetic particle inspection. Magnetizes any shape. Magnetizing current is *both* AC and DC from 110 volt AC line. Write for bulletin today.

Price includes basic equipment and full day's personal instruction by Field Engineer.

*Magnaflux and Magnaglo are U.S. Registered, trademarks of Magnaflux Corporation

MAGNAFLUX CORPORATION
5914 Northwest Highway • Chicago 31, Illinois
New York • Detroit • Cleveland • Dallas • Los Angeles

BREVITY—Identify by IEN - 1511 if you write the maker

STORING . . Fork type rack for individual access to boxes, cartons

Source: UNISTRUT PRODUCTS CO.
1011-15 W. Washington St., Chicago 7, Ill.

Loaded boxes and cartons used to store finished fabrics are positioned in this new rack on fork-type arms extending outward from a vertical frame rated to carry 14,000 lb. on its two 14½-ft. vertical faces. Each rack mounts two sets of seven pairs of forks, each pair rating 1,000 lb.

The arrangement makes individual boxes accessible to a fork truck so any one can be selected for movement without disturbing any of the others. The arms are vertically adjustable to accommodate varying sizes of box without loss of storage space.

BREVITY—Identify by IEN - 1512 if you write the maker

PAINTING . . Zinc base liquid serves as prime coat over rusted metal

Source: CHASE CHEMICAL CO.
40 W. 29th St., 1st Floor, New York 1, N. Y.

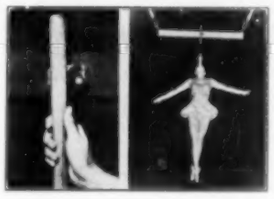
Color is dull battleship gray

Zinkrich is a new liquid material for application on metal surfaces by brush, dip, spray. The liquid dries in air to leave a coating that contains 94 per cent of pure electrolytic zinc. The coating remains serviceable in temperatures to 350 deg. F. It can put on over rust to eliminate rust creep and to provide complete electrical continuity on the surface. It will withstand attack by moisture and by salt water over extended periods to protect the surface underneath.

BREVITY—Identify by IEN - 1513 if you write the maker

FASTENING . . Cam type hanger suspends booms, mops, tools, aerialist

Source: BASSICK CO.
36-40 Austin St., Bridgeport 2, Conn.

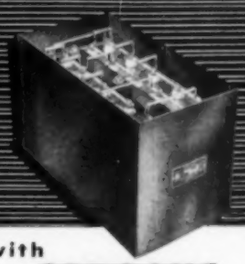


Hand-L-Hold is a new cam-type hanger for application on a wall or door. A handle can be pressed against it, moved upward a little and then released to transfer holding grip to the pivoted cam and the stationary backup stop. Installation is by two screws. The handle being held releases without drag on lifting it a little. The illustration shows a demonstration in which one of Ringling Brothers' aerial artists has suspended herself.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 89

BREVITY—Identify by IEN - 1514 if you write the maker

CUT POWER COSTS!



with SPRAGUE POWER FACTOR CAPACITORS

Lower power bills . . . greater loads from present circuits . . . less wiring, transformer, and switchgear costs in new installations—these are some of the advantages of SPRAGUE "on-the-spot" low-voltage industrial power factor correction capacitors. Write for a free copy of the Sprague Power Factor Correction Guide today and find out how you, too, can save money with Sprague Capacitors.

SPRAGUE ELECTRIC COMPANY
NORTH ADAMS MASS.

BREVITY—Identify by IEN - 1515 if you write the maker

For All Kinds of Slow Speed Requirements
SPECIFY Century GEAR MOTORS

2 to 3 H.P. Type 1R gear motor. Single gear reduction right angle shaft.

Rugged, Quiet, Long Life Operation

There are many reasons why Century gear motors assure satisfactory performance day after day:

Simple design, coupled with accurate machining produces a rugged unit that stays in alignment.

Precision gear cutting assures quiet operation.

Streamlined design provides improved appearance and smooth easily cleaned surfaces.

Century Gear motors are available in a wide range of types from 1/8 to 50 horsepower. Specify Century gear motors for all your slow speed power requirements.

CENTURY ELECTRIC CO.
1806 Pine St., St. Louis 3, Mo.
Offices and Stock Points in Principal Cities

Century C MOTORS

692R

BREVITY—Identify by IEN - 1516 if you write the maker

Need DEPENDABLE production of your MOLDED PLASTICS parts ?

Chicago Molded offers a complete service and undivided responsibility, backed by more than 30 years of experience.

- Top ranking engineers and designers.
- One of the finest mold-making departments in the industry.
- The most modern equipment for injection, compression and plunger molding of all plastics materials.
- Facilities for producing even the largest parts in big volume.
- The vital know-how that means the difference between failure and success on critical requirements.

That's why Chicago Molded ranks today as the country's leading independent custom molder of plastics.

Send us your prints for quotations or discuss your plans with a CMPC engineer. Write or wire... no obligation.

CHICAGO MOLDED PRODUCTS CORPORATION
1031 N. Kolmar Ave., Chicago 51, Illinois

BREVITY—Identify by IEN - 1517 if you write the maker

Uneven Floors . . . Narrow Aisles . . . Sharp Turns . . . Heavy Loads . . . Long Hauls . . . Rough Handling . . . there's a Bond Built-for-the-job CASTER designed especially for your service needs.

36A Series—Double Ball Race Swivel Caster
3A Series—Single Ball Race Swivel Caster
23A Series—Double Ball Race Swivel Caster
40A Series—Double Ball Race Structural Steel Swivel Caster
41A Series—Structural Steel Stationary Caster
Dual Wheel Swivel Caster
1A Series—Stationary Caster
40-AH-VG—V-Grooved Wheel Swivel Caster

● Send for catalog K-38 illustrating and describing the complete line of Bond Industrial Truck Casters.

BOND FOUNDRY & MACHINE CO.
304 Penn St.
Manheim, Pa.

BREVITY—Identify by IEN - 1518 if you write the maker

this Voltage Tester has ALL the features

NEW POLARITY CAP

- **No Lamps**—breakage eliminated.
- **Individually Calibrated.** Positive voltage identification—110, 220, 440, 550 A. C.—125, 250, 600 D. C. on easily read, colored scale.
- **New Polarity Cap**—optional. Magnetic type. Fits both old and new Square D testers.
- **Safe.** Non-breakable fiber case withstands 10,000 volts. Lead wires have vulcanized insulation and 4" fiber grips covering insulation-piercing prongs.
- **Convenient.** Easily operated. Carry in pocket or with tools.

Write for Voltage Tester folder. Square D Company, 6060 Rivard Street, Detroit 11, Michigan

SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

BREVITY—Identify by IEN - 1519 if you write the maker

Atkomatic

Electrically Operated VALVES

Available in a wide selection of types for pressures up to 3000 pounds, ATKOMATIC Valves are extra rugged for extra service. In thousands of installations all over the nation, they have proved their ability to stand up under long and severe punishment. Simple and compact, they provide trouble-free operation either in your plant or on your product. Get the facts about ATKOMATIC!

ATKOMATIC VALVE COMPANY, INC.

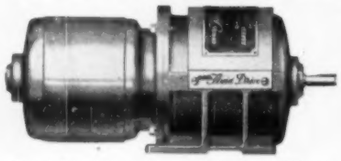
1255 ROOSEVELT AVE. • INDIANAPOLIS 7, INDIANA

Send for Literature

BREVITY—Identify by IEN - 1520 if you write the maker

Take advantage of this

FREE TRIAL OFFER



We invite you to try an American Blower Type TM Gyrol Fluid Drive in actual production on your own machines.

We want you to see for yourself how these remarkable units save power, provide smooth acceleration, overload protection, and absorb shocks. No obligation . . . no cost to you.

Write us direct. Describe the machine on which you want to use the TM unit. Give horsepower of present motor. We'll contact you to arrange installation and trial period.

AMERICAN BLOWER

American Blower Corporation, Detroit 32, Michigan

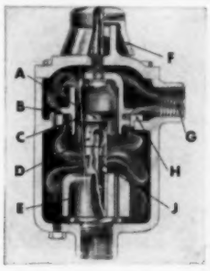
Division of American Radiator & Standard Sanitary Corporation

Serving home and industry AMERICAN-STANDARD • AMERICAN BLOWER CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATERS • TONAWANDA IRON

BREVITY—Identify by IEN - 1521 if you write the maker

VALVE . . Volumetric flow regulator holds adjusted pressure differential

Source: W. A. KATES CO.
428-32 Waukegan Road, Deerfield, Ill.



Constant volume of liquid flow is maintained to a hydraulic cylinder controlling the flow of molten metal to a centrifugal casting operation by this new application of the company's flow regulator. The steady flow controls the casting action independent of fluctuations in flow resistance or in pressure supply in the 250-lb. hydraulic line.

The valve is available in four sizes with ½ to 2-in. pipe connections, 3 to 8-in. diameter, 10 to 17-in. height. Flow range of .1 to 1.5 gpm. in the smallest, 10 to 100 gpm. in the largest both based on water. Flow rate is adjusted within each range by turning the knob on the housing.

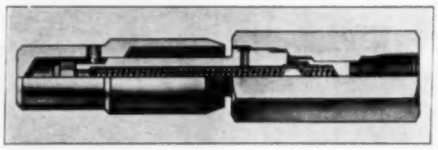
Control centers at the disc A which rides with a little clearance inside the cup-shaped valve in the seat H between upper and lower chambers. Flow is up from a bottom connection through ports J in a hollow stem D and matching ports in the surrounding sleeve, also marked D. The sleeve is weighted at E and is secured to the disc to move up when the disc is forced up by any increase in pressure in the lower chamber as compared to that in the upper one. This upward movement, however, decreases the flow area through the ports J, results in lowered pressure in the bottom chamber, permits the disc and sleeve to move down until a position of balance is reached.

Upward flow through the orifice C between disc and inner valve wall is augmented by parallel flow through orifice B between the valve and its seat H. This orifice can be varied by turning the adjusting knob F for larger or smaller opening to increase or decrease constant-volume delivery through the valve to the outlet G.

BREVITY—Identify by IEN - 1522 if you write the maker

SIGNALING . . Air operated whistle blows on pressure drop in an air line

Source: AIRLARM
P. O. Box 13034-A, Houston 19, Texas



Model 140 is a new heavy-duty design of the company's air-operated whistle to assemble in an air line where it is important to be warned of loss of pressure. It is a companion unit to the one previously described IEN-8320-50. It is recommended for use where noise level is high and service conditions are tough.

The valve remains closed as long as predetermined pressure is maintained in the line. It opens and permits escaping air to blow a shrill whistle signal as long as any pressure remains below the set amount. Pipe connection is ⅜ inch. Overall length is 4½ inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1523 if you write the maker

FAST FINISH BAKING

Refinished Relay Covers and other Control Parts Formerly Air Dried in 8 Hours—Now a Better Wrinkle Finish is Baked in ONE Hour with the

Despatch R-S FINISH BAKING OVEN

● Minneapolis-Honeywell Regulator Co. uses the above Despatch R S Oven for refinishing of controls sent in for repair. The black wrinkle enamel on the relay cover shown is baked to an extremely hard, durable finish in 1 hour at 300° F. saving 7 hours of former air drying time! Other parts are baked ½ hour at 350° F. This fast baking of finishes speeds up the entire repair program, improves service to customers.

Despatch R S Ovens are well insulated, very economical, 100% controlled for uniform heat up to 500° F., with temperature variation seldom more than 3° ± F. Built in a range of sizes for a great variety of applications. Tell us your needs—

Write for Bulletin on R S Ovens.

DESPATCH OVEN CO. Established in 1902

Manufacturers of ovens for: Paint Finishing, Dehydrating, Curing, All Industrial and Laboratory Applications

337 DESPATCH BLDG., MINNEAPOLIS 14, MINNESOTA

BREVITY—Identify by IEN - 1524 if you write the maker

DOR-TITE By DURKEE-ATWOOD KEEPS IT DUST-TIGHT

The Day Company, Minneapolis, outstanding producer of dust filters, depends on Dor-Tite for gasketing between metal-to-metal joints on every unit. This soft, resilient sponge rubber stripping seals in dust . . . locks out air and moisture. Furnished in exact sizes needed, Dor-Tite needs no trimming, applies swiftly, helps cut production costs.

Look for money-saving Dor-Tite applications in your business. Amazingly versatile, Dor-Tite weatherstrips, insulates, stops vibration, cushions shocks, muffles noise, bars dust, air and moisture. Dor-Tite is self-adhesive, presses easily into place, bonds tightly to any firm surface without glue or nails. Patented fabric back positively prevents stretching. Available in widths and thicknesses to suit any product . . . any industry. Call your mill supply house or write direct.

Bulk Sponge Rubber for industrial uses: to 36 inches wide; thicknesses ⅛ to 1 inch; in specified lengths

DURKEE ATWOOD COMPANY

Dept. 56, Minneapolis 13, Minn.

BREVITY—Identify by IEN - 1525 if you write the maker

universal tables

THE CINCINNATI GILBERT MACHINE TOOL COMPANY

save up to 50% of set up time on radials, boring mills

Just one setup enables you to drill at any angle up to 90° on five sides of a cube. But that's only half the story! Cincinnati Gilbert Tables provide four-point support of the work when in the lowered position, without strain on the worm. Thus you get the greatest possible rigidity of the work, greater assurance of accuracy, better ease of operation.

Two sizes: tops 22" square and 27" square; table height: 22". Four ¾ tee slots; center hole 2" diameter. Write for complete facts on all Cincinnati Gilbert accessories: Bulletin 749.

THE CINCINNATI GILBERT MACHINE TOOL CO. • CINCINNATI, OHIO

BREVITY—Identify by IEN - 1526 if you write the maker

More Threaded Holes per Tap with

HY-PRO TAPS

Your cost per tapped hole is much less when HY-PRO Ground Thread Taps are used. When tapping at high speeds these high production taps will usually produce at least SIX TIMES AS MANY HOLES AS A CUT THREAD TAP! In addition, they require only about one fifth the sharpening for the same number of holes, and are less easily broken.

ORDER THRU YOUR DISTRIBUTOR

Commercial • Precision • Special Ground Thread Taps

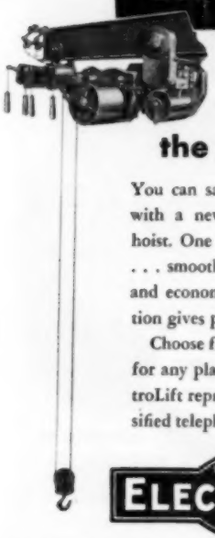
A Subsidiary of Continental Screw Co.

HY-PRO TOOL CO.

New Bedford, Mass., U.S.A.

BREVITY—Identify by IEN - 1527 if you write the maker

ELECTROLIFT



the ONE hoist with ALL the advantages

You can save power, labor and time with a new ElectroLift worm drive hoist. One man handles up to 6 tons . . . smoothly, quietly, quickly, safely and economically. Push-button operation gives perfect control.

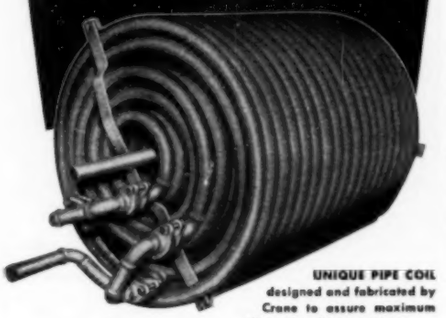
Choose from a wide range of models for any plant purpose. Call your ElectroLift representative listed in the classified telephone directory. Or write to:

WORM DRIVE ELECTROLIFT HOISTS

ELECTROLIFT, INC., 30 Church Street, New York 7, N. Y.

BREVITY—Identify by IEN - 1528 if you write the maker

FABRICATED TO YOUR PRECISE REQUIREMENTS



UNIQUE PIPE COIL designed and fabricated by Crane to assure maximum dimensional compactness.

...pipe coils by CRANE

No pipe coil design is ever too large or small . . . or too complex . . . for Crane to handle. Five Crane Shops, strategically located, offer you skilled manpower and experience. Special machinery assures production techniques that make Crane-built pipe coils the finest available.

Crane Shops are skilled in fabricating tubular materials of all varieties. Although carbon steel pipe is most popular, pipe coils are fabricated from wrought iron, copper, brass, nickel, aluminum, 18-8 Mo, and various types of stainless steels. All pipe coils are regularly tested before shipment. Facilities for stress-relieving and heat-treating are available.

SEND FOR PIPE COIL CATALOG 318

This 48-page catalog—full of information for pipe coil specifiers and buyers—includes diagrams of all common pipe coil designs with dimensions; gives valuable engineering data on pipe coil materials and applications.

CRANE CO., 836 S. Michigan Avenue, Chicago 5, Ill.
Branches and Wholesalers Serving All Industrial Areas

EVERYTHING FOR EVERY PIPING SYSTEM

CRANE

VALVES • FITTINGS • PIPE • PLUMBING AND HEATING

BREVITY—Identify by IEN - 1530 if you write the maker

CONVEYING . . Incline belt unit, stand mounted for portable application

Source: RAPIDS-STANDARD CO.
342 Rapistan Bldg., Grand Rapids 2, Mich.

Cleated belt is assembled on this new Rapid Power Booster belt-conveyor assembly to handle bags, boxes, crates, cartons on incline to 45 degrees. The assembly is available with a 12, 16 or 20-in. belt and in 12, 16 and 20-ft. lengths. The belt unit is raised and lowered by a hand-operated hydraulic power cylinder. Incline is adjusted by two screws operated at a handwheel. Motor drive is provided for the belt movement.

BREVITY—Identify by IEN - 1531 if you write the maker

PAINTING . . Alkyd resins for formulation by paint manufacturers

Source: GENERAL ELECTRIC CO.
101 Plastics Ave., Pittsfield, Mass.

From company's chemical division

Three new resins for use in paint manufacture have been added to the Glyptal line. There is a fast-baking No. 2522 for use in industrial finishes, a No. 7300 for architectural finishes and a No. 7310 for industrial finishes. The first is suited for paints to be employed on stoves, venetian blinds, washing machines, refrigerators. The second applies in interior and exterior enamels and in paints for furniture. The third is a tough baking vehicle for industrial finishes on farm machinery, machine tools, gasoline pumps. It also can be employed in air-drying enamels.

BREVITY—Identify by IEN - 1532 if you write the maker

SPRAYING . . Impingement nozzle, ten orifice sizes rating 1 to 100 gph.

Source: BETE FOG NOZZLE INC.
276-80 Main St., Greenfield, Mass.

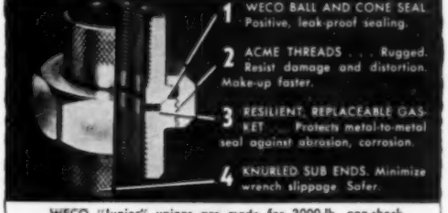
Water or other liquid to be delivered in a fine spray issues under pressure from the orifice of this new pin-jet nozzle to strike the end of a stainless-steel pin. It comes from the pin in finely divided condition. Chief characteristic is the fact that the nozzle will not clog with particles smaller than the orifice itself. Ten sizes range from .015 to .080 inch. Stock units are brass body with the pin at the end made of stainless steel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1533 if you write the maker

WECO "Junior"

The all-steel union that gives you LEAK-PROOF SEALING . . . FASTER MAKE-UP . . . GREATER STRENGTH . . . LONGER LIFE.



1 WECO BALL AND CONE SEAL. Positive, leak-proof sealing.

2 ACME THREADS . . . Rugged. Resist damage and distortion. Make-up faster.

3 RESILIENT, REPLACEABLE GASKET . . . Protects metal-to-metal seal against abrasion, corrosion.

4 KNURLED SUB ENDS. Minimize wrench slippage. Safer.

WECO "Junior" unions are made for 3000-lb. non-shock cold working pressure, in sizes ½" through 2". Available in machined finish, Wecolyte cadmium plated or zinc coated. Other platings on request. All parts are interchangeable.

Conveniently packaged in sturdy cartons—Sizes ½" through 1" packed 24 to carton; larger than 1" packed 12 to carton.

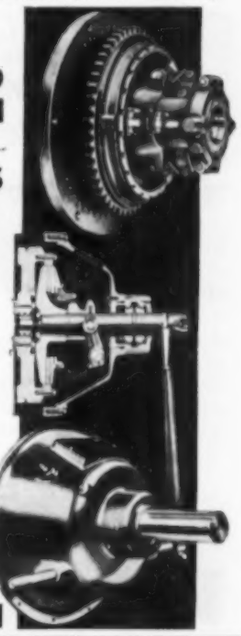
Ask your Oil Field, Industrial or Mill Supply Store for WECO "JUNIOR" UNIONS. Illustrated brochure available. Write for your copy today.

WELL EQUIPMENT MFG. CORP.
Subsidiary of Christian Company
HOUSTON 1, TEXAS
Exclusive Sales Representative Outside Mid Continent Area
CHRISTIAN COMPANY
Bras Calif. New York 7
Export Sales: CHRISTIAN EXPORT COMPANY, Bras Calif. New York 7

WECO
Manufacturers and Distributors of Oilfield, Refinery, Marine and Industrial Equipment

BREVITY—Identify by IEN - 1534 if you write the maker

New ROCKFORD Simplified Low Cost CLUTCHES for Power Take-Offs



This newly developed, simplified heavy duty type clutch uses fewer parts, that can be produced at lower cost. Its design provides for cleaning and cooling through air circulation between the clutch body and pressure plate. Centrifugal action is offset by the toggles being anchored nearer center of the shaft. Self-engaging tendency is overcome by a new toggle lever design. Pressure is spread evenly over the entire friction surface. Accurate balance insures smooth operation. Sizes fit in standard S.A.E. flywheel housings. Convenient adjustment requires no special tools.

Send for This Handy Bulletin

Give dimensions, capacity tables and complete specifications. Suggest typical applications and make helpful recommendations for planning efficient power take-off drive.

BM

ROCKFORD CLUTCH DIVISION

BREVITY—Identify by IEN - 1535 if you write the maker

- Hexagon Brass Cap Nuts
- Machine Screw Nuts
- Steel and Brass Machine Screws
- Wood Screws—Sems
- Phillips Recessed Head Screws

Sturdy in design, Pheoll wing nuts are cold forged from either steel or brass with metal evenly distributed for maximum strength. Wings are ample in size, uniform in shape and spread at the correct angle for easy gripping. The bearing surface of each wing nut is flat and true. Threads are tapped evenly and on center to insure tight assembly without stripping.

These wing nuts are stocked in screw and bolt sizes from No. 4 to ½" with either coarse or fine threads. They are made free from burrs, scratches and sharp edges and can be furnished in different finishes such as Cadmium, Nickel, Zinc, etc.

KNURLED BRASS NUTS—Pheoll offers knurled brass nuts that are precision made with tapped holes on center and deep knurling for positive grip. A broad range of sizes is immediately available from stock.

Pheoll MANUFACTURING COMPANY • 3700 Roosevelt Road Chicago 50, Illinois
SCREWS • BOLTS • NUTS
Industrial Fasteners and Molding Devices

BREVITY—Identify by IEN - 1536 if you write the maker

Save Time with a WHITING CROSS-OVER BRIDGE

*Before Cross-Over Bridge
*After Date of Installation

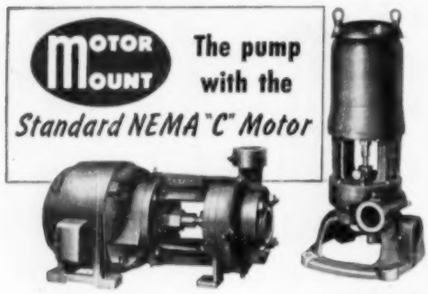
You can save time—you can save money, and you can speed up materials movement from dock-to-dock with Whiting Cross-Over Bridges. Designed in three general types (Overhead-Rise—Ground-Level—and Roll-Away).

Write for Bulletin MS-C-400 and learn how these practical Cross-Over Bridges fit your materials-movement requirements. Whiting Corporation, Harvey, Illinois.

BREVITY—Identify by IEN - 1537 if you write the maker

MOTOR MOUNT

The pump with the Standard NEMA "C" Motor



Type "H" Horizontal MOTOR-MOUNT

Type "V" Vertical MOTOR-MOUNT

This new Deming "MOTOR-MOUNT" pump permits mounting on any standard motor having NEMA type "C" flange. Pump shaft is rigidly close-coupled to standard motor shaft by a compression type coupling, thereby assuring perfect alignment of all rotating parts.

Easily accessible stuffing box can be furnished with packing, or mechanical shaft seal.

Capacities of the new Deming "MOTOR-MOUNT" pumps range up to 200 gallons per minute with heads up to 165 feet at speeds of 1750 and 3500 RPM.

Write for illustrated BULLETIN 4350

THE DEMING COMPANY
521 Broadway • Salem, Ohio

DEMING DEPENDABLE PUMPS

BREVITY—Identify by IEN - 1538 if you write the maker

Graham

THE FINEST VARIABLE SPEED DRIVE MADE

ALL SPEEDS FROM TOP TO ZERO AND REVERSE
SIZES UP TO 3 H. P.

ONCE SET, SPEED IS "ON THE MARK"

NO BELTS, TUBES, FRICTION DISCS

Check the advantages that you'll find in only the Graham Variable Speed Drive. Then, to provide the speed control that will make your fine machine even better, investigate Graham.

ALL SPEEDS FROM TOP TO ZERO, and reverse if desired.

"ON THE MARK" SPEED. No belts, tubes, friction discs or other perishable parts.

EXTREME COMPACTNESS. The only variable drive built as a streamlined extension of a standard induction motor —or available without motor.

PROVED PERFORMANCE. Standard equipment on leading machine tools, office equipment, offset presses, feeders, inspection machines, white printers, etc.

LOW COST. Does the job better, for less money, than less efficient, more costly drives.

PROMPT DELIVERY ON ALL STANDARD MODELS
MAIL THE COUPON OR READER SERVICE CARD

GRAHAM TRANSMISSIONS, INC.
Dept. IEN, 3754 N. Holton St., Milwaukee 12, Wisconsin

Gentlemen: Please send your latest catalog on *Graham Variable Speed Drives* up to 3 H.P.

Company.....

Name.....*Title*.....

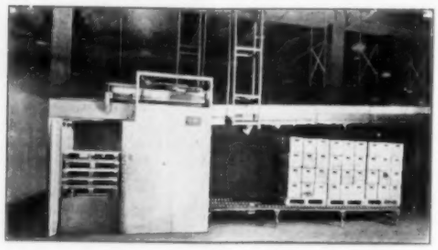
Address.....

City.....*Zone*.....*State*.....

BREVITY—Identify by IEN - 1540 if you write the maker

HANDLING . . Stacking machine loads cartons or cases on pallets

Source: ALVEY CONVEYOR MFG. CO.
9302 Olive St. Road, St. Louis 5, Mo.



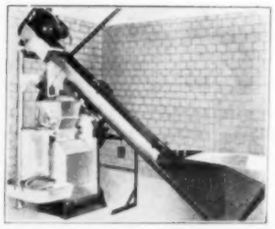
Containers to be stacked on pallets are directed to this new Pallet-Loading machine along an elevated conveyor line. They ride onto an apron at the top of the machine just above a pallet positioned on an elevator to receive them. As soon as they are in position the apron is withdrawn so the containers rest on the pallet. At this point the pallet moves down one layer, the apron is again presented, loaded, withdrawn and the second layer of containers will be in place on the pallet.

The cycle repeats until the pallet is loaded, moved out of the machine and another takes its place from the empty-pallet magazine at the side of the elevator section. Thirty containers can be loaded in a minute. Loading is in locking assembly, the pallet being turned 90 deg. between layers. Starting and stopping control centers at a pushbutton station.

BREVITY—Identify by IEN - 1541 if you write the maker

PACKAGING . . Filling machine and bag for edible meat trimmings

Source: ST. REGIS PAPER CO.
230 Park Ave., Room 1460, New York 17, N. Y.



Model 400-S designates new automatic bag-filling machine and a new multiwall paper bag with a polyethylene-coated inner ply for edible meat trimmings. The machine is capable of filling a hundred 75-lb. bags per hour. As each bag is filled to a predetermined weight the machine stops to permit removal of the filled bag and application of an empty one.

The machine includes an inclined screw feeder that delivers upward from an intake hopper connecting to the trimming line in a meat-packing plant. Delivery is to a hopper on the machine from which the trimmings move downward to the packer mounted on a platform scale. The scale is equipped with a cut-off that stops the action when predetermined weight is reached. Parts contacting the meat are made of stainless steel.

The filled bags are delivered from the machine to a freezing unit where temperature is reduced to zero. Tests that have been made on meats stored in the bags at this temperature for 30 to 190 days indicate no difference in taste from fresh meats. There is no rancidity. The bags retain their flexibility.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1542 if you write the maker

Fabrication-by-welding is being used by an ever-increasing number of careful, thorough buyers . . . and they are specifying American Welding.

A copy of our new 20-page illustrated catalog will be sent on request.

THE AMERICAN WELDING & MANUFACTURING CO.
160 DIETZ ROAD • WARREN, OHIO

BREVITY—Identify by IEN - 1543 if you write the maker

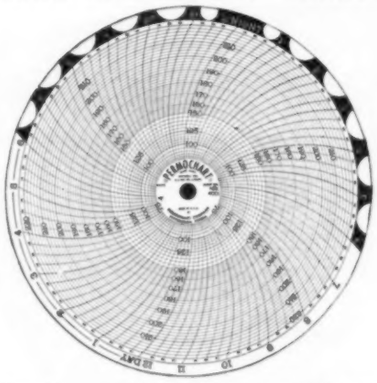
LOCKS by EAGLE

PADLOCKS · LUGGAGE LOCKS
DEAD LOCKS · CABINET LOCKS
NIGHT LATCHES · DOOR CLOSERS

THE EAGLE LOCK COMPANY • • • TERRYVILLE, CONNECTICUT
Subsidiary of Bowser, Inc.

BREVITY—Identify by IEN - 1544 if you write the maker

LONG-LIFE PLASTIC CHARTS



Reusable — PERMOCHART — Washable*

You can use WASHABLE, laminated plastic "PERMOCHARTS"* on all your circular recording and controlling instruments. Convenient to use, they'll save you time and expense.
• Guaranteed serviceable life—TWO YEARS. • Cost per day only $ .00205 to $ .00342. • Available for any instrument using circular charts. • Made of 100% "Vinylite" plastic laminated construction.

Send for sample of PERMOCHART construction

* Reg.

ALLEGHENY PLASTICS, INC.
390 CHESTNUT ROAD SEWICKLEY, PA.

BREVITY—Identify by IEN - 1545 if you write the maker

FOTO-FLO* MODEL C
PHOTO-COPYING MACHINE
New! Speedier! More Economical!

DAYLIGHT OPERATION NO DARKROOM REQUIRED

Makes up to 5 (18" x 24") Prints a Minute of anything written, printed, drawn or photographed

WRITE DEPT. 51-56 for information showing how FOTO-FLO can speed production and lower photo-copying costs.

*Reg. U. S. Pat. Off.

HALOID THE HALOID COMPANY
ROCHESTER 3, NEW YORK
Branch Offices in Principal Cities
Photocopy Papers • Photo-copying Machines • Photographic Papers

BREVITY—Identify by IEN - 1546 if you write the maker

THIS HANDBOOK MAKES SOLDERING EASY!

Learn the soldering tricks of experts—*without* any hard study. This revised and up-to-date, 20-page handbook leads you step-by-step to real soldering skill. Time-saving methods, DO's and DON'T's, difficult operations, flux and solder tables, all made clear by 43 easy-to-understand illustrations. NOT a catalog, but a real professional's pocket manual. Send only 10¢ in coin.

SEND NOW... ONLY 10¢

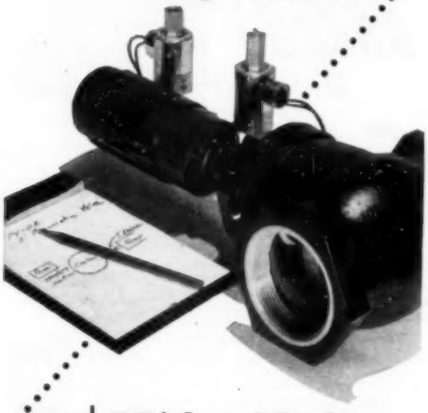
GET NEW WELLER SOLDERING GUN CATALOG, TOO

When you send for your copy of SOLDERING TIPS, be sure to ask about the new Weller Soldering Guns. Fastest, handiest soldering tools you've ever seen—just point, pull, and solder!

WELLER ELECTRIC CORP.
823 Packer Street, Easton, Pa.

BREVITY—Identify by IEN - 1547 if you write the maker

Compressed air controls **high vacuum**



and **DPi has 10 sizes of valves to do it**

DPi NOW OFFERS pneumatically operated valves in the smaller sizes, as well as the larger sizes previously available.

This means that now, with DPi's complete line of valves ranging in size from 3" to 32", you're assured of instant, sure-seal control, for any size high vacuum system.

In the new smaller-sized pneumatic valves, compressed air at 50 p.s.i. provides a positive seal that can be put into action instantly by electric controls, and will hold indefinitely. The small combined size of valve and operator means easy installation where space is at a premium. You get convenient, automatic operation for your high vacuum system . . . enjoy the advantages of both compressed air and remote electric control.

These new valves are another step in DPi's continuing program to make industrial applications of high vacuum as convenient and automatic as possible. As specialists in the design and building of high vacuum installations—whether it be a special valve or a complete system—DPi invites your inquiries. Write to *Distillation Products Industries,* Vacuum Equipment Department, 761 Ridge Road West, Rochester 3, N. Y. (Division of Eastman Kodak Company).

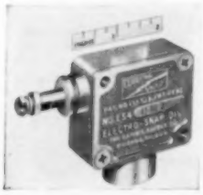
DPi high vacuum research and engineering

Also . . . vitamins A and E . . . distilled monoglycerides . . . more than 3400 Eastman Organic Chemicals for science and industry

BREVITY—Identify by IEN - 1549 if you write the maker

SWITCH . . Sensitive snap acting, plunger operated, momentary contact

Source: EXHIBIT SUPPLY CO.
4220-28 W. Lake St., Chicago 24, Ill.



New assembly of the company's Electro-Snap switch, previously described IEN-9596-50, employs a die-cast housing and an operating plunger. The plunger engages the switch so the contacts will be closed for a predetermined portion of the plunger's forward movement and for all of the retraction to the starting point. The closed-circuit impulse can be employed for sequence action, safety interlocking, switch positioning, time-cycle initiation, electric counter pulsing.

The switch mechanism is rated at 10 amp. on 220-volt ac. It is single-pole double-throw design and can be connected for normally-closed or normally-open operation. The housing can be supplied in various designs to meet given requirements.

BREVITY—Identify by IEN - 1550 if you write the maker

MARKING . . Transfer tape to write in gold, silver, or colors

Source: ALLEN MINSTER
306 Cherry Lane, Glenside, Pa.

Sample for test upon request

New paper tape is placed on a surface on which a marking is to be made and then is written upon with a pencil or blunt stylus with a little more than normal pressure. The marking is transferred through the tape to the surface to produce the written or drawn lines in gold, silver, bronze or in colors, all of which are available as the tape facing.

Transfer can be made on paper, porous surfaces such as slate, but not on surfaces that have been glazed. The tape is available in rolls to 3 in. in width and to 200 ft. in length.

BREVITY—Identify by IEN - 1551 if you write the maker

FILTERING . . Air line unit employs laminated paper element

Source: A. SCHRADER'S SON
476 Vanderbilt Ave., Brooklyn 17, N. Y.

Three sizes are available for ¼, ⅜ and ½-in. air lines in this new No. 3084 filter. The unit encloses a filter element made of laminations of water-repellent paper to separate rust, dirt, moisture from the air stream. The element is replaceable and can be cleaned. Air-handling capacity is maintained at normal rating of the pipe line when the unit is opened for blow-down twice a day. Application is made ahead of air-using appliances and tools.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1552 if you write the maker

DAV-SON CORK-BACKED BULLETIN BOARDS

DAV-SON indoor and outdoor style Bulletin Boards provide attractive displays for up-to-the-minute announcements and posters. Your choice of hardwood or metal frames, with or without locking glass doors, illuminated or non-illuminated.

"THE SAFETY DIRECTOR"

Flashing display is a constant warning to employees to avoid accidents. Changeable letters permit timely safety messages to be set up as often as required. Definite improvement in safety records has been noted in plants using "The Safety Director."

Write for complete information regarding DAV-SON — Cork Bulletin Boards and Directories and the famous "Safety Director."

Ask for Bulletin "A"

DAV-SON

A. C. DAVENPORT & SON, INC.
ESTABLISHED 1932
311 N. DESPLAINES ST., CHICAGO 6, ILL.

BREVITY—Identify by IEN - 1553 if you write the maker

designed for the production line

CP UNIVERSAL ELECTRIC TOOLS — outstanding for dependability, ruggedness, low maintenance — are priced no higher than other production line tools, because they are sold direct to the user by Chicago Pneumatic, the only major company selling electric tools directly to industry. In the wide CP Universal Line are drills, screwdrivers, nut runners, tappers, grinders, sanders — including many angle models. Write for Catalog 899-5.

CHICAGO PNEUMATIC TOOL COMPANY
General Offices: 8 East 44th Street, New York 17, N. Y.

PNEUMATIC TOOLS • AIR COMPRESSORS • ELECTRIC TOOLS • DIESEL ENGINES
ROCK DRILLS • HYDRAULIC TOOLS • VACUUM PUMPS • AVIATION ACCESSORIES

BREVITY—Identify by IEN - 1554 if you write the maker

TOW-LINE CONVEYOR *solves* a lot of handling problems

If you want to clear up confusion and assure an orderly flow of traffic in your plant, in your warehouse, in your order make-up, receiving or shipping departments, consider the possibilities of a MHS Tow Line Conveyor.

The sub-floor tow line conveyor gives you a completely unobstructed floor area with no overhead structures. Dollies or trucks may be engaged or disengaged at any point along its path for loading or unloading.

If it is impracticable to install the sub-floor track, you may tow trucks or dollies from an overhead MHS Monoveyor. Both the sub-floor and the overhead systems can be operated on one or more levels.

Write for a copy of Bulletin TC-1.

Mechanical Handling *Systems, Inc.* MHS
4605 NANCY AVE. • DETROIT 12, MICH.
Offices in Principal Cities

BREVITY—Identify by IEN - 1555 if you write the maker

DON'T TIE UP BIG MILLERS ON SMALL PRECISION JOBS!

BENCHMASTER
LOW COST MILLING MACHINE
does the work faster, easier, accurately, and economically!

MILLS HORIZONTALLY and VERTICALLY.
Also DRILLS, GRINDS, TURNS!

Write for FREE literature.

benchmaster PUNCH PRESSES AND MILLERS
2952 West Pico Boulevard, Los Angeles 6, California

BREVITY—Identify by IEN - 1556 if you write the maker

"Grip-Master," the original screwless drill-press vise is available in four sizes: 3", 4", 6", 8" jaw widths.

● The instantaneous and effortless setting, and guaranteed positive locking of the amazing "Grip-Master" *Screwless* Vise add up to new *savings* on hundreds of drill-press and production line operations. "Grip-Master" also makes an ideal base-structure for jigs and fixtures. Hammer blows will not budge its tenacious grip obtained by an effortless press on the locking-lever. Built-in parallels level work instantly. Write today for full information and prices on the "Grip-Master" line, or ask your Dealer for a demonstration.

NATIONAL MACHINE TOOL COMPANY
DEPT. 171-B RACINE, WISCONSIN

BREVITY—Identify by IEN - 1557 if you write the maker

ERTEL CYLINDER TYPE
Positive Seal
DISK FILTER

1. FILTERING ELEMENTS are independently tightened to provide positive seal.
2. OUTER CYLINDER is closed by separate handwheel to prevent drippage or evaporation.

★ This multi-purpose filter will operate with a lesser number of sheets than its rated capacity if so desired. Unit is arranged to make reloading and cleaning as easy as possible. Rigidly constructed inlet and outlet rings insure a positive seal and thus eliminate the danger of bypassing unfiltered liquid. Fully illustrated in bulletin ECD-1 which gives complete specifications.

USES: Drugs, Cosmetics, Lotions, Perfumes, Wines, Whiskies, Cordials, Rums, Cider, Extracts, Water, Syrups, Hospital Supplies, Plating Solutions such as copper, nickel, chrome, tin, Chemicals, Antiseptics, etc.

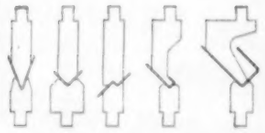
ERTEL ENGINEERING CORPORATION
KINGSTON NEW YORK
New York City Sales: 40 West 48th Street, N. Y. 19, N. Y.

ERTEL

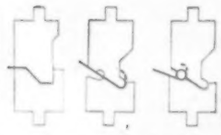
ASBESTOS FILTER SHEETS • ASBESTOS SHEET FILTERS
CYLINDER TYPE DISC FILTERS • PYROGEN FILTERS
VACUUM BOTTLE FILLERS • PUMPS • MIXERS • CAPPERS

BREVITY—Identify by IEN - 1558 if you write the maker

BRAKE DIES



Made from FORGED CHISEL STEEL BILLETS



Made by the makers of the famous SEMCO NIBBLER PRESS

- MANY STILL IN USE EVEN AFTER 10, 20 AND EVEN 30 YEARS.
- THEY COST MORE BUT THEY LAST FOR YEARS.

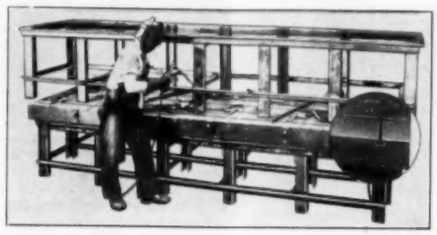
Write for estimates on your work and ask for latest literature.

SEMCO
SERVICE MACHINE COMPANY INCORPORATED
200 MILLER STREET ELIZABETH, N. J.

BREVITY—Identify by IEN - 1559 if you write the maker

WELDING . . Work support table for arc welding, to 54 by 144 inches

Source: CHALLENGE MACHINERY CO.
1553-57 Fulton St., Grand Haven, Mich.



Semi-steel table measuring 6 in. in thickness presents a square flat surface with work or fixture-holding T-slots to position work for arc-weld assembly. The table is equipped with a steel stand that has provision for leveling and locking. Three sizes range from 30 by 60 in. to 54 by 144 inches. The units can be supplied so two or more assemble together.

BREVITY—Identify by IEN - 1560 if you write the maker

RUBBER PRODUCTS . . Injection molded silicone for bushings, grommets, seals

Source: MINNESOTA RUBBER & GASKET CO.
3640 Wooddale Ave., Minneapolis 16, Minn.

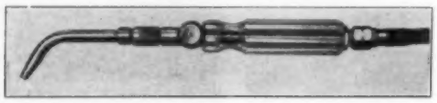
Company invites requests for bid

Insulation bushings for electric devices operating at high temperature show excellent dielectric strength when injection molded from silicone rubber in a new process developed by the company. It is prepared to manufacture relatively small parts subject to temperatures between minus 130 and plus 400 deg. F. It will advise on design.

BREVITY—Identify by IEN - 1561 if you write the maker

HEATING . . Acetylene-air torch for brazing, heating, soldering uses

Source: NATIONAL CYLINDER GAS CO.
838-42 N. Michigan Ave., Chicago 11, Ill.



Sod-R-Braze is a new acetylene-air torch that is available with six tips and individual mixers for a range of work between soldering fine parts and heavy duty heating. The flame provides sufficient heat to silver-braze copper tube to ¾ in. in diameter. A regulator is supplied with the torch to provide pressure adjustment to 15 pounds. A refrigerant gas-leak detector is available to attach to the torch handle.

The torch assembles a lightweight plastic handle and thumb-operated valve with which the pilot light can be adjusted and the torch itself turned on and off. The handle is grooved for a good grip and for ventilation. Also available is a carrying stand made of aluminum tubing to hold a 40 cu. ft. acetylene cylinder, the torch, hose, wrench and lighter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1562 if you write the maker

BUCKINGHAM... *Thread* RESTORERS

Just slip on, tighten and turn. That's all there is to it—it's that simple . . . and quick . . . And what *results!*

Flats and nicks are eliminated—even heavily rusted and corroded threads are cleaned pronto. No more drilling or hack sawing to restore damaged male threads —when you have a Buckingham Thread Cleaner handy.

Follows the pitch of any right or left hand thread—sizes range from ¼" to 4" root diameter. No need to insert or change dies. Cutting jaws adjust easily to proper size on the threads. See your nearest Buckingham dealer—or write.

6103 — ¼" to 1" root diam.	$ 6.50
6203*— ¼" to 1" root diam.	8.50
6104 — 1" to 2 5/16" root diam.	12.00
6106 — 2" to 4" root diam.	27.50
6204*— 1" to 2 5/16" root diam.	21.00

*Short swing type.

BUCKINGHAM MANUFACTURING CO., INC.
49-51 Travis Street Binghamton, N. Y.

BREVITY—Identify by IEN - 1563 if you write the maker

Lapp AUTO-PNEUMATIC PULSAFEEDER

piston-diaphragm metering chemical pump with automatic output control

Applicable to all pneumatic or electro-pneumatic instrumentation. Provides automatic metering in response to variable flow, pH, temperature, liquid levels, pressure, or other processing variables. Operates at constant speed—variable flow results only from variation in piston stroke length, controlled by pneumatic cylinder. Pumping head isolates chemical being pumped.

WRITE for complete description and specifications. Lapp Insulator Co., Inc., Process Equipment Division, 426 Maple St., LeRoy, N. Y.

Lapp
PROCESS EQUIPMENT
CHEMICAL PORCELAIN VALVES • PIPE • BRACING RINGS
PULSAFEEDER CHEMICAL PROPORTIONING PUMPS

BREVITY—Identify by IEN - 1564 if you write the maker

Ten basic sizes with capacities from 30 Mbh to 490 Mbh. Totally enclosed motors.

nyb

COMET UNIT HEATER

Horizontal Type

Ceiling suspension type with heavy duty, welded steel, fin-and-tube heating element. (Extra heavy non-ferrous coils also available.) Suitable for continuous heating service on steam pressures up to 150 pounds or more.

Bulletin 483

Vertical, Projection Type Also Available

For efficient heating from high-ceiling areas—for door heaters over small openings—or where the horizontal type Comet Heater is not applicable. Ten basic sizes; capacities from 27 to 332 Mbh.

Bulletin 484

IUHA HEAT WITH UNIT HEATERS

nyb THE NEW YORK BLOWER COMPANY
GENERAL OFFICES • 3180 SO. SHIELDS AVE. • CHICAGO 16
FACTORIES AT LAPORTE, IND. AND CHICAGO, ILL.

BREVITY—Identify by IEN - 1565 if you write the maker

FREE! FLOOR-CARE BOOKLET

● Send today for this 8-page booklet packed with valuable information on all types of floors. Tells you how they're made — how to clean them — protect them — make them wear longer. Answers 101 questions. Saves you time and money! Every plant and office should have one.

MAIL THIS COUPON NOW FOR YOUR COPY!

MASURY-YOUNG COMPANY
76 ROLAND STREET, DEPT. C
BOSTON 29, MASSACHUSETTS

Please send me your FREE FLOOR-CARE BOOKLET

NAME _____ (Please print clearly)
STREET _____
CITY _____ ZONE _____ STATE _____

BREVITY—Identify by IEN - 1566 If you write the maker

Streamline

your hand labeling with new

Mystik

Self-Stik Labels

FAST! Stick instantly, by pressure, without glue, water or heat. Save time, speed production.

EASY! Solve tough labeling problems, for hard-to-label surfaces or locations.

PERMANENT! Won't dry out, curl up or come loose—yet can be removed without a trace.

BEAUTIFUL! Printed in any color combination, die-cut to any shape. Better labels for every purpose . . . to sell or identify or for instructions.

For free samples write:

CHICAGO SHOW PRINTING CO., 2644 N Kildare, Chicago 39

BREVITY—Identify by IEN - 1567 If you write the maker

Hand Protection for Every Worker ... on every job!

WITH U. S. DIPPED CANVAS UTILITY GLOVES AND DIPPED NEOPRENE GLOVES

Many lost man hours can be saved when your workers have the protection of economical U. S. Dipped Canvas Utility Gloves. They reduce time losses caused by splinters, cuts, abrasions, acids and disinfectants. Good flexibility, soft flannel lining and curved finger construction make for perfect comfort. Gauntlet or knit wrist style.

For the utmost in safety, comfort and economy, specify U. S. Dipped Neoprene Gloves. Curved fingers, roughened surface for positive grip. Both styles are available at your nearest U. S. Rubber Branch.

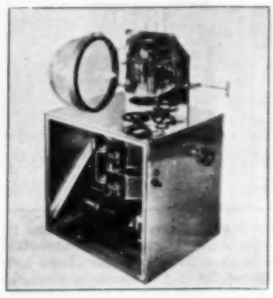
U.S. Industrial GLOVES

UNITED STATES RUBBER COMPANY

BREVITY—Identify by IEN - 1569 If you write the maker

TESTING . . High vacuum furnace to melt, pour, heat treat and degas

Source: NATIONAL RESEARCH CORP.
72 Memorial Drive, Cambridge 42, Mass.



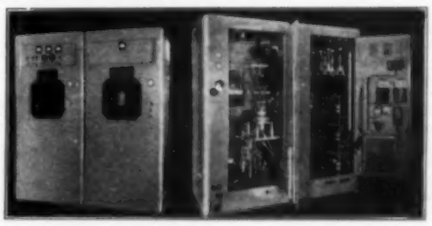
Ultimate vacuum is 5×10^{-6} mm. of mercury and working temperature, controllable within plus or minus 5 deg. C. is to 2,000 deg. C. in this new vacuum furnace. It is designed for laboratory metallurgical work in which the operator can melt and solidify, melt and pour, add to the melt, stir, look into the 2½ by 5-in. hot zone, measure hot-zone temperatures, introduce controlled atmospheres, degas, heat treat. Type 29-0410-18 Vacuum Furnace is the designation. Power connects from a shop supply through a pair of autotransformers which lower the line input to 15 volts and provide power-input control.

Vacuum is developed and held in the 18 by 12-in. Pyrex bell jar by a 12½-cfm. Kinney mechanical pump and the company's new Type H-4-P purifying-type oil-diffusion pump. Vacuum is read on a thermocouple gage and control. The bell jar is protected by a wire-mesh guard and is hinged to the vertical base plate. A lifting mechanism permits removal and replacement of the heating-element cover while the furnace is in operation. A water-cooled pan under the element catches spilled metal and shields the bell jar. There is a port to introduce controlled atmosphere and an electrical feed-through for thermocouple wires or heater leads for special work.

BREVITY—Identify by IEN - 1570 If you write the maker

HEATING . . Induction machine, two independent work stations, 20 kw.

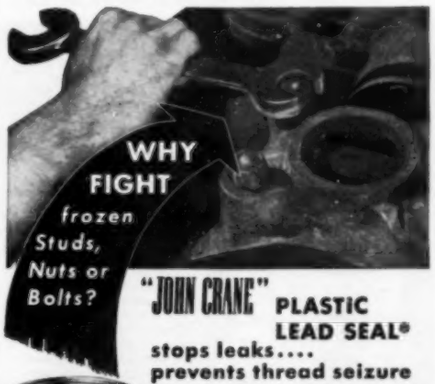
Source: OHIO CRANKSHAFT CO.
3802 Harvard Ave., Cleveland 1, Ohio



Toccotron 20 is a new electronic induction-heating generator with a frequency range between 400,000 and 600,000 cycles. It mounts two independent work stations on the faces of the two housings that stand side by side. Equipment on the interiors is separated so the parts handling high frequency will be grouped together. Both housings feature accessibility to the working parts and electrical protection. Power tubes and contactors are shock mounted. A motor-driven pump handles cooling water.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1571 If you write the maker



"JOHN CRANE" PLASTIC LEAD SEAL® stops leaks.... prevents thread seizure

Why use a red or white lead pipe dope on your threads, when Underwriters' Approved non-hardening Plastic Lead Seal will do the job so much better?

It costs no more to use the best. The original application is no more expensive — yet it means that you can forget leakage worries...that you will never be faced with breaking a frozen connection, stud, bolt, or nut!

Make your first Plastic Lead Seal application now. Write us — we'll send a free sample.

JOHN CRANE CRANE PACKING COMPANY 1815 CUYLER AVENUE · CHICAGO 13, ILL.

BREVITY—Identify by IEN - 1572 If you write the maker

Cost Problem Solved with FULLERGRIPT BRUSH

To solve the problem of "the fibers flying out of the brushes", one leather manufacturer asked Fullergript engineers to design and build a new plate washing brush. The Fullergript method of construction solved the problem of "fibers flying out", and the greater density of Fuller gript enhanced the thoroughness of the brushing and increased brush life. This brush has since been widely adopted by tanneries.

Whatever you make, if you have a power-brush operation Fullergript offers advantages worth investigating. Simply write to . . .

FULLERGRIPT The FULLER BRUSH CO.

INDUSTRIAL DIV., 3583 MAIN ST. HARTFORD 2, CONN.

BREVITY—Identify by IEN - 1573 If you write the maker

PRINTWEIGH STOPS LOSSES!

ELIMINATES HUMAN ERRORS IN READING REMEMBERING AND RECORDING WEIGHTS

PRINTWEIGH SCALES give you *accurate printed records* of each weighing operation . . . positive assurance that your weight facts are right *every* time! Prints big, clear figures . . . on thick tickets . . . on large or small sheets . . . on strips . . . with extra copies. Saves time, stops losses for receiving, shipping, stock rooms, batching and many other weighing operations. Write for bulletin 2021. Toledo Scale Company, Toledo 12, Ohio.

TOLEDO

HEADQUARTERS FOR SCALES

BREVITY—Identify by IEN - 1574 If you write the maker

On factory maintenance jobs... you'll find many uses for the

Remote Control HEIN-WERNER "PUSH and PULL" HYDRAULIC JACK

- Pump operates at any angle . . . in any position.
- Easier to set up, and requires fewer attachments.
- Protected by safety valves. Cannot be overloaded.
- Cannot become airbound at any angle or in any position.
- Available in 4, 10 and 20-ton capacities, with a wide variety of attachments for hundreds of industrial applications.

Hein-Werner HYDRAULIC JACKS

HEIN-WERNER CORP. Waukesha, Wis.

BREVITY—Identify by IEN - 1575 if you write the maker

Here's the Simplest Way to Measure

NOISE

Thousands of General Radio 759-B Sound Level Meters are in use in industry not only to measure noise, but also to localize it . . . to improve products . . . to compare competitive equipment . . . to increase plant efficiency.

The G-R noise meter is so simple anyone can operate it with a few moments instruction. Its range is from 24 to 140 db . . . from the slightest whisper in a sound-proof room to the shrill of a locomotive whistle. It is completely self-contained, battery-operated and portable. Its price is $350, complete and ready for immediate use.

If you have *any* problem involving the measurement of volume or location of noise in machinery or equipment, this sound-level meter may be the answer. For complete information

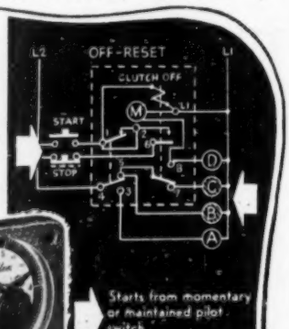
"Write for Your Copy of "THE NOISE PRIMER"

GENERAL RADIO COMPANY Cambridge 39 Massachusetts

90 West Street NEW YORK 6 — 920 S. Michigan Ave. CHICAGO — 1000 N. Seward St. LOS ANGELES

BREVITY—Identify by IEN - 1576 if you write the maker

a New Timer



Starts from momentary or maintained pilot switch.

4 load circuit combinations are built in. Solves those difficult jobs without using complicated circuits.

There's a wide selection of timing ranges. Enclosed mechanism seals out trouble.

BULLETIN 120 will give you the full story

EAGLE SIGNAL CORPORATION Moline, Illinois

BREVITY—Identify by IEN - 1577 if you write the maker

KEEPS METALLIC PAINTS IN *Continuous Suspension* —right at the gun!

Constant agitation in the container—plus circulation in the hoses—assures perfect material at the nozzle.

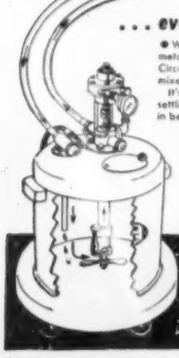
. . . even when spray gun is idle!

● Whether spraying is continuous or intermittent, metallic paints can't settle out when you use a Graco Circulating Paintmaster. Built-in agitator keeps paint mixed in the container.

It's ideal for spot-spraying operations in which quick-settling metallic-base finishes are used. And it results in better-quality finishing.

Graco Paintmaster fits right over original 5-gal. container, pumps paint without transferring to pressure pot. Saves time, eliminates spilled paint. Low pressure, less overspray. 55-gal. models also available. Write today for free literature.

GRAY COMPANY, INC.
26 Graco Square Minneapolis, Minn.



GRACO *Paintmaster* SPRAY GUN SUPPLY PUMP

For Your Special Information

ALL MAKERS ARE LISTED — IEN S-1

A plant engineer needed a special generator. He needed it quickly as he explained in a letter he sent us by airmail. We picked the names of two makers for whom descriptions had appeared in IEN. We added the names listed in Thomas' Register where, as we have been pointing out over the years, all makers of all products are listed. We called the engineer on long distance. By now he doubtless has the generator.

We will be happy to do the same thing for you at any time you need fast action. We just want to note here, however, that our records indicate the purchasing department in that engineer's plant has a copy of the Register just as your own purchasing agent is very possibly a subscriber. It will pay you to check on this point so you can make quick reference to both IEN and TR to find the things you need. If the book is not in your purchasing department we suggest that you "take steps".

BROTHERHOOD WEEK FEBRUARY 18 TO 25 — IEN S-2

Consider the aims expressed by the following quotation which titles the letterhead of the National Conference of Christians and Jews—"To promote justice, amity, understanding and cooperation among Protestants, Catholics and Jews, and to analyze, moderate and finally eliminate intergroup prejudices . . . with a view to the establishment of a social order in which the religious ideals of brotherhood and justice shall become the standards of human relationships."

U. S. SAVINGS BONDS — IEN S-3

We quote from a letter from the Treasury Department—"It is generally accepted that the outlook for the coming year is dominated by an expanding military program, an expanding program of foreign aid, increased taxes, probable industrial and consumer controls, and an increasing inflationary trend.

"All of these factors point up the increasing importance of the Savings Bonds program.

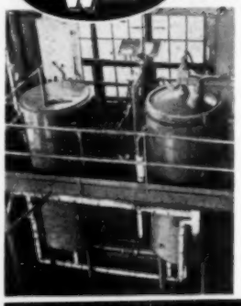
"Bonds are not easy to sell and they must be sold. Bonds are a subject as serious as insurance or a savings account, or the building of a home, or a child's education. These things bonds will buy. Hard selling is a necessity with a multi-purpose product whose lowest selling price is $18.75. Such a long-range, long-term savings program requires public belief in the product, its safety, its soundness, and its potential in a successful complete program."

Top Management: YOUR BOOST IS NEEDED MOST

BREVITY—Identify by IEN - 1578 if you write the maker

For DEPENDABLE IMPREGNATION OF ELECTRIC COILS—WOOD CARBON PARTS—AND OTHER MATERIALS ...with PUSH BUTTON Control

The New Struthers Wells IMPREGNATOR



The new Struthers Wells impregnator provides simplified, dependable impregnation of a wide variety of materials. The tank cover can be opened in seconds without manual effort. Furnished in complete units as shown or principal parts only can be specified if desired. The new unit is for use by heating with steam, electricity, Dowtherm, or for non-heated operations. ● Heating Systems are supplied if required.

Write today for Bulletin B-30

STRUTHERS WELLS CORPORATION
WARREN, PA.
Plants at WARREN, PA. and TITUSVILLE, PA.
OFFICES IN PRINCIPAL CITIES

BREVITY—Identify by IEN - 1579 if you write the maker

Let this all-purpose

DEWALT

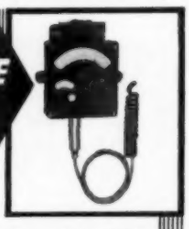
save money in Your plant

Here is the ideal, all-purpose machine you need to cut costs and step up production in your plant. DeWalt is *many* machines in one! It dadoes, routs, shapes, tenons, grinds, sands, etc.! It's fast, accurate, safe, dependable. It takes up little floor space—and streamlines all your cutting operations. Write for catalog. DeWalt, Inc., 102 Fountain Avenue, Lancaster, Penna.

DEWALT INC.
A subsidiary of American Machine and Foundry Co.

BREVITY—Identify by IEN - 1580 if you write the maker

NEW TYPE CI ADJUSTABLE THERMOSTAT



The new Type CI Adjustable Indicating Thermostat is a precise temperature control for gas, liquid, and metal-to-metal applications, such as ovens, hot plate presses, water baths, incubators, proofing cabinets and cold cabinets. It is most useful on units where periodic checks of temperature are required, advisable, or will prove time-saving. The new Type CI is simply and ruggedly built, employing the highly sensitive response action of a solidly liquid-filled bulb and bellows assembly to a snap-acting switch and indicating pointer. The thermostat is adjustable over its entire range by a knurled thumbscrew on the front of the case.

SPECIFICATIONS: Case 5½ x 5½ x 1¾", Wt. 3 lbs. Standard ranges 50° – 350°F and 50° – 600°F, special ranges may be had between – 120°F and +600°F. Standard differentials ½°F in circulating liquid, 2°F in air. Switch ratings 10 amp 125 V AC and 5 amp 250 V AC. Write for new bulletin No. 4816T which gives full details.

UNITED ELECTRIC CONTROLS COMPANY
80 School Street
Watertown, Mass.

STANDARD & SPECIAL THERMOSTATS & PRESSURE SWITCHES

BREVITY—Identify by IEN - 1581 if you write the maker

Where "SMALL WORK" GRINDING JOBS are concerned Depend on Foredom FLEXIBLE SHAFT MACHINES for TOP PERFORMANCE VERSATILITY and SPEED!

Quality Tested Since 1922

Model 9050 ONLY $29.60 COMPLETE with 6-STEP FOOT RHEOSTAT and PENCIL-SIZE HANDPIECE

Bench and Hang-Up Models, also models like Model 9050 *(illustrated)* which can be hung up, set on bench or mounted under bench. 5 Handpiece types, pencil-size or larger, all with quick-detachable feature. Extra good flexing qualities provide utmost freedom of movement in handpiece.

Foredoms are profitable additions to all three departments — PRODUCTION, TOOLING AND MAINTENANCE.

SEE YOUR INDUSTRIAL SUPPLY DISTRIBUTOR. IF HE CANNOT SUPPLY YOU WRITE TO US. MAIL COUPON FOR CATALOG.

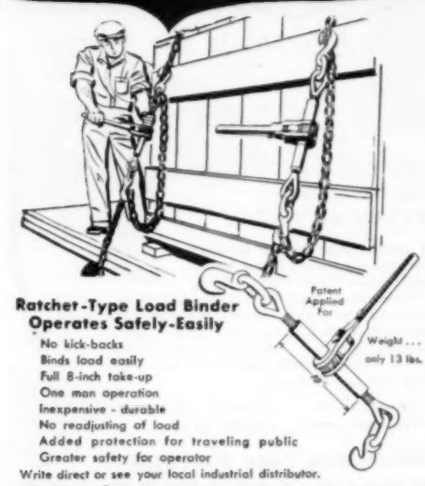
FOREDOM ELECTRIC CO. Dept. N-4139
27 Park Place, New York 7, N. Y.

Send your catalog No. N-4139, showing different uses of Foredom Flexible Shaft Machines.

Name _____
Address _____
City & Zone _____ State _____

BREVITY—Identify by IEN - 1582 if you write the maker

A NEW Standard for LOAD-BINDERS



Ratchet-Type Load Binder Operates Safely-Easily

- No kick-backs
- Binds load easily
- Full 8-inch take-up
- One man operation
- Inexpensive - durable
- No readjusting of load
- Added protection for traveling public
- Greater safety for operator

Write direct or see your local industrial distributor.

American FORGE AND MANUFACTURING CO.
812C Shore Avenue • Pittsburgh 12, Pa.

BREVITY—Identify by IEN - 1583 if you write the maker

Design with AIR!

Pressure • Vacuum • Suction

Handle all these jobs!

Lifting—holding—chucking—sorting—cleaning—drying—cooling—separating—mixing—agitating—feeding—blowing—leak-testing—pressure-boosting, etc.

COUNTLESS jobs are done faster, simpler, less expensively by using pressure, vacuum or suction provided by Leiman Air Pumps. Air is the only reliable, trouble-free solution to many operations. Learn more about the great possibilities of designing with air. Leiman engineers offer over 60 years' experience with thousands of air applications. Outline your application for recommendation and suggestions. Write for data outlined below.

Your most efficient air source— LEIMAN AIR PUMPS

Take up their own wear!

IF an air pump can do it—a Leiman Air Pump will do it best! Simple, compact design provides greater capacity, size for size . . . has fewer moving parts . . . provides a continuous flow of air . . . is extremely quiet in operation . . . uses no gaskets or packing . . . maintains leakless fitting for life . . . requires no storage tanks . . . needs little or no maintenance . Range of sizes for pressure up to 25 lbs. p.s.i. or vacuum up to 29". Specify Leiman Air Pumps on equipment you buy—install them in equipment you build. Get engineering data.

Exclusive Leiman hinged wing design permits wings to wear uniformly, maintaining full pressure or vacuum, after 15 and 20 years' steady service.

WRITE FOR ENGINEERING DATA

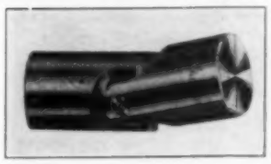
- **16-PAGE CATALOG** showing construction, types, sizes, capacities, etc.
- **APPLICATION FOLDER.** Contains 60 "how-to-do-it" blueprints of actual applications. Will suggest many more.

LEIMAN BROS., Inc.
166 Christie St., Newark 5, N. J.
AIR PUMPS • AIR MOTORS • SAND BLASTS • DUST COLLECTORS

BREVITY—Identify by IEN - 1585 if you write the maker

DRIVE . . Universal joint, made of steel, heat treated and ground

Source: BOSTON GEAR WORKS
63 Hayward St., Quincy 71, Mass.



Thirteen sizes with hub diameter at ⅜ to 4 in. and length from 1¾ to 10⅝ in. are included in a new line of universal joints that is stocked by the company. Parts are made of alloy steel, heat treated and ground. Each assembly consists of two yokes, a hardened and ground center block, a large pin that passes through one of the yokes and the center block, and a small pin that passes through the other yoke, the center block and the large pin. This small pin is locked in place to hold all of the parts in assembly. Joints with 1-in. or larger hubs are fitted with an oiler in the large pin.

Hubs can be specified solid or bored, standard internal diameter being $\frac{1}{16}$ to 2 in. in the bored units. Approximate weight in solid construction is .05 to about 31½ pounds. Rating at 100 rpm. is 1/12 to 100 hp. based on an approximately straight installation. Breaking load is 100 to 123,000 pounds. Maximum recommended angle is 10 to 15 degrees. Operation can be maintained at a maximum of 37 degrees.

BREVITY—Identify by IEN - 1586 if you write the maker

LUBRICATING . . All-purpose grease is inhibited against oxidation in use

Source: E. F. HOUGHTON & CO.
301-5 W. Lehigh Ave., Philadelphia 33, Pa.

Available in two consistencies

Cosmolube is a new cold-milled grease that is suitable for use on bearing surfaces subject to heat, cold, moisture. It clings to metal surfaces, is designed for general use.

BREVITY—Identify by IEN - 1587 if you write the maker

MARKING . . Label applicator holds and delivers 350 gummed labels

Source: STANDARD REGISTER CO.
626 Albany St., Dayton 1, Ohio

Label-Flow is a new register that holds a supply of 350 gummed labels for dispensing one at a time. The register moistens the label, rolls it into position and cuts it off from the folded supply in the housing. Label dimensions are 3½ by 6½ inches. Plain units, to be written on in the housing and then applied, and preprinted units are available to specification.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1588 if you write the maker

Stop CORROSION in your Steam System WITH CORAVOL

When fed to your steam system, **CORAVOL**: (1) *prevents* corrosion in steam and condensate lines. (2) *cleans out* clogging rust deposits resulting from previous corrosion. Thus, **CORAVOL** protects lines, increases the effectiveness of heat transfer surfaces, restores original capacity of lines and the operating efficiency of valves and traps.

CORAVOL is part of a complete technical service which provides special formulas of treatment for:
Boiler feed water . . . hot water supply . . . refrigerating brine . . . cooling and condenser water . . . rapid scale removal . . . coagulation . . . algae control . . . fuel oil supply . . . soot removal.

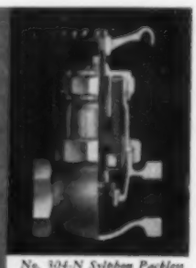
Write TODAY to Western Chemical Company, 715 Washington Street, Kansas City, Missouri—for complete FREE data about the **CORAVOL** process.

Western Chemical Co. is owner of U. S. Patent No. 2653024 covering the use of volatile amines in steam systems.

WESTERN CHEMICAL CO.
715 WASHINGTON KANSAS CITY, MO.

BREVITY—Identify by IEN - 1589 if you write the maker

ARE LITTLE LEAKS CAUSING YOU BIG LOSSES?



No. 304-N Sylphon Packless Valve comes in sizes from ½" to 2" for pressures up to 150 lbs. Also available in larger sizes is No. 1304 with flanged connections for liquid pressures up to 80 lbs. No. 304-NV is ideal for vacuum service.

Stop them with SYLPHON PACKLESS VALVES

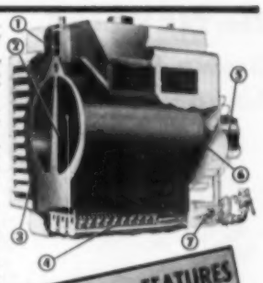
● Costly leaks of valuable liquids or gases can be *stopped for good* . . . with Fulton Sylphon Packless Valves. They prevent waste—provide vacuum protection—help your equipment operate more efficiently and economically.

A dual-ply, seamless Sylphon metal bellows replaces customary packing . . . provides a positive seal. Many sizes and types, with body made of brass, bronze, cast iron, cast steel, stainless steel or monel.

Widely used in the processing industries—chemical plants, oil refineries; also in power plants, aboard ships. Ideal for standard equipment. Write for Bulletin CN-013.

FULTON SYLPHON
DIVISION
ROBERTSHAW-FULTON CONTROLS CO. • • KNOXVILLE 4, TENN.
Temperature Controls • Bellows Devices • Bellows Assemblies
Canadian Representatives, Darling Brothers, Montreal

BREVITY—Identify by IEN - 1590 if you write the maker



1. **Beauty Line Styling**—Finished in rich, dust-resisting ivory baked enamel.
2. **Free Flow Heat Exchanger**—Heavy welded steel, gas tight. Rapid heat transfer. Needs no cleaning.
3. **Adjustable Louvers**—Horizontal or vertical louvers. Positive heat direction.
4. **Super Combustion Chamber**—All-steel construction assures heating satisfaction and economy. "Dual-flame" burner tips.
5. **Fan Motor**—Heavy duty, rubber-cushioned.
6. **Positive Circulation Fan**—Quiet, vibrationless, smooth running.
7. **Safety Controls**—Rapid Safety Pilot shuts off gas in event of flame outage. Uses all types of gases.

THESE EXCLUSIVE *Humphrey* FEATURES ASSURE THE BEST IN *GAS-HEAT!*

COMPLETE HEATING COMFORT
ECONOMICAL OPERATION • TROUBLE FREE SERVICE

Humphrey Unit Heaters are complete heating plants in themselves—compact and self contained . . . equipped with powerful fan which circulates heat to all areas. Completely automatic, requiring minimum maintenance. With a Humphrey, you eliminate the need for fuel storage, steam and water lines, boiler equipment . . . suspended from the ceiling, they leave floor space for productive facilities. Investigate the advantages of Humphrey Gas Unit Heaters—write today for literature.

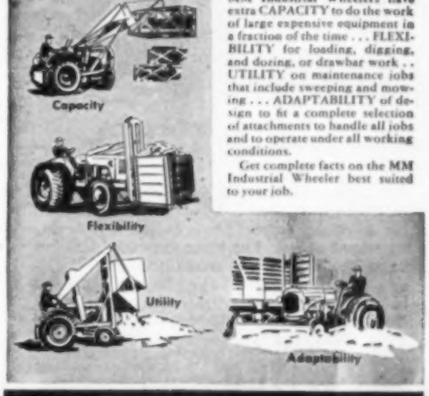
GENERAL GAS LIGHT COMPANY
KALAMAZOO, MICHIGAN

BREVITY—Identify by IEN - 1591 if you write the maker

MANUFACTURERS LARGE OR SMALL

MM INDUSTRIAL WHEELERS

. . . SERVE THEM ALL!



MM Industrial Wheelers have extra CAPACITY to do the work of large expensive equipment in a fraction of the time . . . FLEXIBILITY for loading, digging, and dozing, or drawbar work . . UTILITY on maintenance jobs that include sweeping and mowing . . . ADAPTABILITY of design to fit a complete selection of attachments to handle all jobs and to operate under all working conditions.

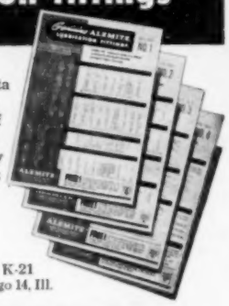
Get complete facts on the MM Industrial Wheeler best suited to your job.

MINNEAPOLIS-MOLINE
MINNEAPOLIS 1, MINNESOTA

BREVITY—Identify by IEN - 1592 if you write the maker

FREE!

4 helpful data sheets on Alemite lubrication fittings



• These handy, factual data sheets give specifications for all types and sizes of Alemite Fittings. Enable you to quickly, accurately select and specify the right Alemite fitting for every bearing. Simplify ordering, save time!

Write today for your free set. Address Alemite, Dept. K-21 1850 Diversey Pkwy., Chicago 14, Ill.

ALEMITE

Industrial Lubrication Equipment

Another Product of Stewart-Warner

BREVITY—Identify by IEN - 1593 if you write the maker

The NEW Brown & Sharpe MICROMETERS

The completely new line of Brown & Sharpe Micrometers offers an outstanding combination of advanced features. Greater durability and accuracy are provided by the exclusive, stainless steel, one-piece spindle and screw with hardened and ground threads. Easier, more accurate reading is made possible by the wide-spaced divisions, large-size thimble, black graduations, and dull chrome finish. Long-wearing carbide measuring faces assure enduring accuracy. See these new micrometers at your tool supplier's. Brown & Sharpe Mfg. Co., Providence 1, R. I.; U. S. A.

We urge buying through the Distributor

BROWN & SHARPE BS

BREVITY—Identify by IEN - 1594 if you write the maker

Increase production... cut costs... with this BOSTITCH T5 Tacker

You increase production and cut costs when you use the Bostitch T5 Tacker. Shoots in staples twice as fast as ordinary tacking. Leaves one hand free for better control of work. Easily fastens as close as 1/16" to internal corners. Permits untrained operators to outstrip the fastest worker with old-style hammer and tacks. Safer — no swallowing of tacks, no mouth infection. For complete details write for Bulletin 133, BOSTITCH, 454 Mechanic Street, Westerly, R. I.

BOSTITCH

fastens it better, AND FASTER with wire

ALL TYPES OF MACHINES FOR APPLYING STAPLES

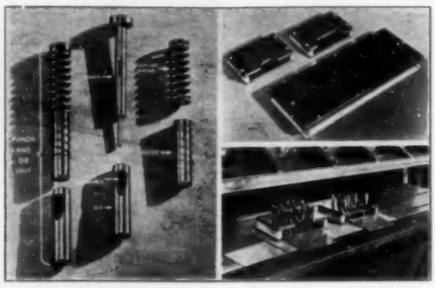
ALL TYPES OF STAPLES APPLIED BY MACHINES

Trade-mark "Bostitch" Registered U. S. Patent Office and Foreign Countries

BREVITY—Identify by IEN - 1595 if you write the maker

PRESS TOOLS . . Insert punches and dies make self-contained die set

Source: WALES-STRIPPIT CORP. 361 Payne Ave., North Tonawanda, N. Y.



Punches, stripper springs, guide bushings, bushing-support springs, dies, and blank box-type and twin-plate holders make up a new patented Multiple Hole Punching System to perforate flat work in a press. The punches are held in retracted position in the bushings by the stripper springs. The bushing-support spring holds the complete punch assembly up, for entering-work clearance, in the upper portion of the box-type holder. The dies insert in holes in the bottom portion in a position that leaves their side slug-ejecting openings in the clear.

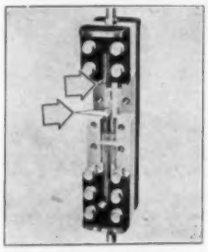
A die set is made up by selecting the desired size of holder and simply drilling and reaming its top and bottom plates to a template. Since the guide bushing and the die are the same diameter for a given size of punch there is no problem in changing drills or reamers and in maintaining exact registering alignment. A range of box-type holders will take work to 21 by 23 inches.

The twin-plate holder differs from the box-type in that its top and bottom portions are separate. They bolt or clamp to the press platens for wide separation in open position to assist in work insertion and removal. The same punches, bushings and dies apply in both and can be removed from sets not in use to make up ones required for active duty. Twin-plate capacity is to 44 by 92 inches.

BREVITY—Identify by IEN - 1596 if you write the maker

GAGE . . Flat glass design for water level under high pressures

Source: YARNALL-WARING CO. 122 Mermaid Lane, Philadelphia 18, Pa.



Frelon designates a new molded pressure-sealed gasket that has been developed by the company to fit in the grooves of the insert body on its flat-glass water-level gage. The gasket is recommended for application when glasses or gaskets now in service are to be replaced. It is supplied in new gages as the company assembles them for use in high-pressure and high-temperature services.

Chief characteristic lies in the fact that it will not adhere to the gage's metal surfaces due to a special coating compound. It strips clean when replacement is required.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1597 if you write the maker

CUT MAN-HOUR LOSSES *from* SICKNESS

Kill virus and bacteria in your offices and laboratories

Glycolator method costs only pennies per day

Actual tests prove that Glycolized air reduces air-borne virus and bacteria to a safe level even in public rooms and protects workers up to 6 hours after leaving treated atmosphere. GLYCOLATOR method employs inexpensive, automatic vaporizers capable of treating 7500 to 1,000,000 cu. ft. of air continuously at a cost ranging in pennies per day. No special installation required in most cases. For specific information . . .

WRITE *Glycolator* DIVISION IRON CITY CHEMICAL COMPANY, Valencia, Penna.

BREVITY—Identify by IEN - 1598 if you write the maker

New! Low-Cost! Wide-Range! VARIABLE Speed Sheaves Easily Attached to Any Machine

1/15 TO 15 HP. RATIOS UP TO 8:1

● Simple, sturdy Speed Selector Sheaves are applied to any machine in only a few minutes . . . giving you wide-range speed control at extremely low cost. You get wide speed variations with standard V-belts, since two variable pitch sheaves are used. Eliminates bulky sliding motor bases, movable jackshafts and wide, high-cost special V-belts.

• Standard V-belts • Automatic belt alignment
• Fixed shaft centers • LOW COST

Write FOR FREE BULLETIN

SPEED SELECTOR INC.

118-A NOBLE COURT • CLEVELAND 13, OHIO

BREVITY—Identify by IEN - 1599 if you write the maker

CAPCO DOCK COVERS OFFER YEAR 'ROUND PROTECTION

Can be installed inside or outside of dock door . . . . models for various purposes.

SOLD AT A LOW COST

...and the cost is especially low because it pays for itself many times...saves time and money over many years.

● PREVENTS ACCIDENTS
● ONE MAN CAN OPERATE
● FIREPROOF
● WATERPROOF
● DURABLE — LONG LIFE
● DEPENDABLE

BEAT THE BAD WEATHER

CAPCO Dock Covers completely enclose the space between car and building doorways, protecting loading and unloading during bad weather. Recommended by safety engineers. No more wet merchandise in the rain . . . no more interruption during winter. Here's your insurance against loss of either heat or refrigeration; you have practically the same as indoor loading.

CAPCO

Be sure to write for illustrated literature and prices.

622-24 PROSPECT AVENUE • KANSAS CITY 1, MISSOURI

▼ BREVITY—Identify by IEN - 1601 If you write the maker ▼

All at one time...
it removes rust,
removes oil,
prepares the metal
for painting

This FREE Folder Tells About Oakite's Great New Pre-Paint Cleaner

OAKITE Compound No. 33 is a cleaning-phosphating material that simultaneously removes oil and rust and conditions the metal surface for painting.

It's a great soak cleaner for metal parts of moderate size; and great for hand-swabbing on large pieces like cabinets, desks, doors and truck cabs.

Oakite Compound No. 33 saves money, *frequently eliminates pickling operations on moderately rusty steel.*

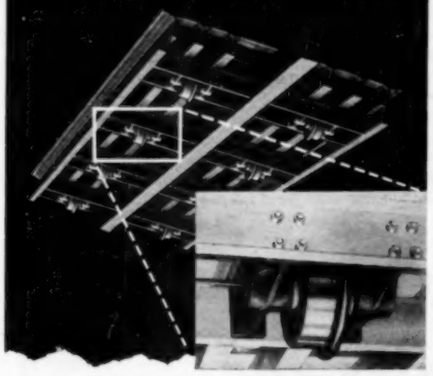
FREE Write to Oakite Products, Inc., 16A Thames St., New York 6, N. Y., for your copy of Folder F7993 on *"Oakite Compound No. 33"*.

Technical Service Representatives in Principal Cities of U. S. & Canada

OAKITE SPECIALIZED INDUSTRIAL CLEANING MATERIALS • METHODS • SERVICE

▼ BREVITY—Identify by IEN - 1602 If you write the maker ▼

FOR NEW FURNACE CARS
OR AS REPLACEMENT
UNITS ON USED CARS...



. . . ALWAYS SPECIFY PHILLIPS CAR WHEEL ASSEMBLIES

Furnished as a complete "package" with wheel, axle, bearings, axle boxes, and grease fittings*, Phillips high capacity furnace car wheel assemblies are quickly and easily installed. They so simplify car construction, that often the complete car can be fabricated on the job.

**Phillips Car Wheel Assembly features Timken Roller Bearings or bronze metalline oilless bushings for high temperature installations.*

Available in:
12", 14", 16" and 18" WHEEL DIAMETERS

WRITE FOR BULLETIN E-22

MANUFACTURERS SINCE 1863 **PHILLIPS** MINE AND MILL SUPPLY COMPANY PITTSBURGH, PA.

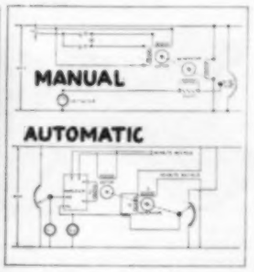
MATERIALS HANDLING EQUIPMENT

2300 JANE STREET • PITTSBURGH 3, PA.

▼ BREVITY—Identify by IEN - 1604 If you write the maker ▼

CONTROL . . Electronic equipment for remote control of process variables

Source: REPUBLIC FLOW METERS CO.
2244 Diversey Parkway, Chicago 47, Ill.



Valve adjustments, damper regulation, motor speed, feeder settings can all be regulated at a central location, singly or in related manner, by installation of the company's new electronic Telemaster equipment. Construction is featured by the use of plug-in elements for replacement rather than field servicing, by the use of multiple-conductor cables between master and operating mechanisms and by the provision to switch quickly from automatic to manual control when the electronic devices are to be taken out of service for inspection without interrupting a process cycle.

Each control element in an installation is connected to its master by an electronic circuit consisting of two voltage dividers or slidewires connected through an amplifier. The sender slide wire, in effect two legs of a Wheatstone bridge, is mounted in the master. The receiving slidewire, the other two legs, is on the remote control or actuator for a valve, damper, motor regulator. The wiper on the receiving slidewire is driven to duplicate any changing position of the wiper on the sending slidewire in order to maintain bridge balance. One master can control a number of control units. A feedback generator prevents hunting. Continuous position indication is provided independent of the electronic circuit.

Bulletin 1100, 8 pages, presents basic illustrated description of construction, operation and application, circuit diagrams.

▼ BREVITY—Identify by IEN - 1605 If you write the maker ▼

RETRIEVING . . Spring operated reel carries 25 ft. of electric cord

Source: APPLETON ELECTRIC CO.
1716 Wellington Ave., Chicago 13, Ill.

Rating is 10 amp. on 220-volt ac. or dc. for this new Series 78 Reelite. It pays out and retrieves 25 ft. of rubber-covered electric cord, is available with any of six types of hand lamp, a machine connector body or a key socket. A vapor-proof unit is included in the series complete with a hand lamp attached. There is a model also particularly for use with portable cloth cutters. The reel housing swivels on its mounting base through a complete circle. Mounting can be on any overhead 4-in. octagonal box.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 1606 If you write the maker ▼

Drill Hardened Steels without Annealing—

With the new, improved "HARDSTEEL" Drill, you can do accurate, smooth drilling, countersinking, counterboring and reaming in steels hardened by any process without first annealing the work. And they work with equal ease on work-hardening steels and high carbon—high chrome steels of any degree of hardness.

"HARDSTEEL" Drills fit standard drill presses. They save time and reduce rejects. They permit engineering changes requiring additional drilling after hardening. And parts drilled after hardening always match at assembly.

Write for a copy of the "HARDSTEEL" Operators Manual showing how "HARDSTEEL" drills are cutting costs in thousands of plants.

You Harden It—We'll Drill It—With "HARDSTEEL"

BLACK DRILL COMPANY
Division Black Industries
1378 East 222nd St. • Cleveland 17, Ohio

Also makers of— BLACK DRILLING UNITS—AUTOMATIC, SELF-CONTAINED—FOR COST-CUTTING PRODUCTION ON ALL MATERIALS *Write for information*

▼ BREVITY—Identify by IEN - 1607 If you write the maker ▼

No waste in cutting
skid-resistant
U·S·S MULTIGRIP FLOOR PLATE

. . . and, whether used on small step-plates of machinery or to cover entire factory floors, Multigrip installations are neat, comfortable underfoot, economical to maintain, permanent, safe.

Columbia Steel Company, San Francisco
Tennessee Coal, Iron & Railroad Company, Birmingham
United States Steel Company, Pittsburgh
United States Steel Supply Company, Warehouse Distributors, Coast-to-Coast
United States Steel Export Company, New York

USS **MULTIGRIP FLOOR PLATE**
UNITED STATES STEEL

▼ BREVITY—Identify by IEN - 1608 If you write the maker ▼

Milwaukee HOLE-SHOOTER

with exclusive split-body design

Its electrical parts can be inspected, cleaned and adjusted *while in operation*

NOW USED by LEADING INDUSTRIES for PRODUCTION and MAINTENANCE

In less than two years, the new "A" series of Milwaukee HOLE-SHOOTERS has been adopted as "standard equipment" by many of America's largest portable-tool users. Its acceptance for heavy-duty service is phenomenal. Wt. 3¾ to 4¼ lbs. Capacities and speeds: ½" — 2000, 3500 and 5000 R.P.M.; 5/16" — 1000 R.P.M.; ¼" — 650 R.P.M. Ball and roller bearings. Meco-built super-power motor, 115 V, AC or DC. Priced: $39.50 to $46.00. See your distributor or write us for Folder 115.

Milwaukee QUALITY TOOLS

MILWAUKEE ELECTRIC TOOL CORP., 5360 W. STATE ST., MILWAUKEE 8, WIS.

▼ BREVITY—Identify by IEN - 1609 If you write the maker ▼

SHORTENS THE BRIDGE between DRAFTING and PRODUCTION

THE ORIGINAL DRAFTING MACHINE
UNIVERSAL
and still the PACE SETTER after 50 Years
1901 . 1951

● Universal Drafting Machines speed ideas into production by eliminating waste motion and "drawing board jitters." They combine into one high precision unit the most used tools of the draftsman's art—T-square, triangles, protractor and scales.

Today's Boardmaster Model represents fifty years of engineering progress—has many unique features. It is the only drafting machine that gives you a hinged anchor for easy paper placement; a spring balance on both arms permitting almost effortless movement; a full vision protractor; a protractor equipped with ball-bearings to eliminate play and to last for years. And when you buy your Boardmaster, remember that it is the only one that can be adapted while in service to any board angle.

Universal cuts drafting time up to 40%—reduces fatigue—helps to counteract today's higher drafting room costs with low initial outlay. Write, today, for descriptive circular to Universal Drafting Machine Corp., 7960 Lorain Ave., Cleveland 2, O.

UNIVERSAL
BOARDMASTER MODEL
DRAFTING MACHINE

BREVITY—Identify by IEN - 1610 if you write the maker

40¢ per day unit cost pays off for Modern Tool & Die, Cleveland

"The Power-Flex is a paying investment," says Erwin Gerhard, V. P. and Supt. of Modern Tool & Die Co., Cleveland. "We use these units for grinding, polishing and buffing. It's easier to plug the Power-Flex into any convenient socket than to fool with air tool connections."

Handles carbide cutters

"We now operate 6 units. On the basis of 200 hours use per year, each costs only 40c per day ... plenty profitable compared with time saved for toolmakers at 4c per minute. Probably 60 of our tool-room men use these 6 tools."

Call your Dumore Distributor today for a demonstration.

DF-AA

Write today for free CATALOG!

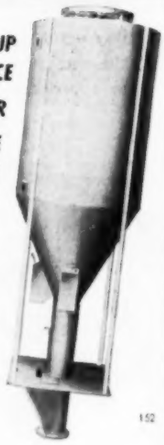
The DUMORE Company
Dept. B-47 • RACINE, WISCONSIN
Export Address: 13 E. 40th St., New York, N.Y., U.S.A.

BREVITY—Identify by IEN - 1611 if you write the maker

SPROUT WALDRON MUNCY PENNSYLVANIA

VERTICAL MIXERS

- *TAKE UP LESS SPACE*
- *USE LESS POWER*
- *FEATURE THE INTER-BATCH RESERVOIR*



For a great variety of products ranging from glue flakes to organic dyestuffs, Sprout-Waldron Vertical Mixers provide the best in blending equipment. Standard or made to fit your individual requirements, these mixers bear the stamp of approval by thousands of satisfied users. Capacities from 10 to 375 cu. ft. For expert advice on your mixing or blending problems write to Sprout-Waldron & Co. Inc., 5 Waldron St., Muncy, Penna.

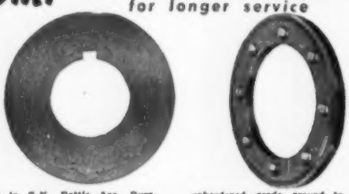
152

Vertical Mixers, Attrition Mills, Rotary Feeders, Ribbon Type Mixers, Crushers, Knife Cutters, Continuous Mixers, Roller Mills, Separators, Pulleys

SPROUT-WALDRON

BREVITY—Identify by IEN - 1612 if you write the maker

O.K. GANG SLITTER KNIVES *for longer service*



Made in O.K. Battle Axe, Dura-Chrome or Standard Carbon Grades. Precision ground to ±.0002 tolerances on thickness, diameter and bore. Extremely high finish. SPACERS for above in hardened or unhardened grade ground to same tolerances as Slitters. We make rotary cutters similar to the one shown for trimming sheet steel, light plates. Some are made with bevels for cutting paper, rubber, plastic, cloth, etc.

O.K. ROTARY SHEARS & BLADES *for maximum toughness*

The OHIO KNIFE Co.
CINCINNATI 23, OHIO, U. S. A.

CLIP AND MAIL TODAY

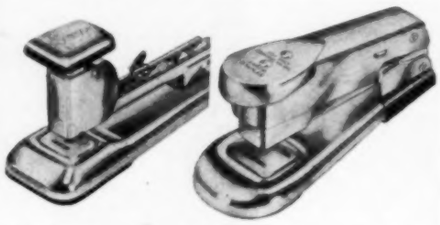
THE OHIO KNIFE CO., CINCINNATI 23, OHIO
Gentlemen: Please send without obligation specific data on knives I have checked.
☐ CIRCULAR KNIVES ☐ SHEAR BLADES
COMPANY_____
NAME_____
ADDRESS_____

(18)

BREVITY—Identify by IEN - 1613 if you write the maker

STAPLING . . Hand operated tools for ½ by ¼ in. staples, also tacks

Source: ARROW FASTENER CO.
28-36 Maujer St., Brooklyn 6, N. Y.



Stapling or tacking operations can be performed by the company's recently improved Models 105 and 202 staplers. Both feature quick access to the staple track to relieve clogging. No. 202 also has a locking mechanism that keeps the operating parts in place so not more than one staple can be ejected at a given time.

Both units take ½ by ¼-in. staples, holding totals of 105 and 210 respectively. Reach measures 2¾ and 3¾ inches. Weights are 10 and 16 ounces.

BREVITY—Identify by IEN - 1614 if you write the maker

CLEANING . . Lens cleaning station equipped for goggles, masks, helmets

Source: CARHOFF CO.
9319-23 Buckeye Road, Cleveland 4, Ohio

Just spray and wipe

New station at which goggles, masks and other lens equipped devices can be cleaned is made of welded steel and is designed to secure to a post or wall. It is stocked with a bottle of the company's No-Fog cleaning fluid, a spray pump and a box of no-lint tissues. The station is designed for mounting in departments where the lens equipment is employed mostly and to be near the point of use.

BREVITY—Identify by IEN - 1615 if you write the maker

CUTTING . . Toggle type tool for bolts or bar stock to ¼ inch

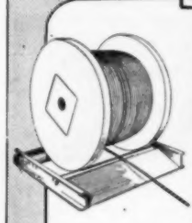
Source: MANCO MFG. CO.
Grove & West, Bradley, Ill.

Pressed-steel handles are assembled with tool-steel jaws in this new No. 15 bolt cutter. The jaws are replaceable, can be resharpened. They will cut hard materials such as music wire without indenting. Tool finish is gunmetal blue.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1616 if you write the maker

Simple as A B C



Handle heavy reels easily and safely; remove wire or cable from top or bottom, front or back of reel with

ROLL-A-REEL

Low slanted front and positive front lock insure quick loading or unloading.

Eliminate jacks and cumbersome handling.

Style A: 2,000 lbs. cap. 37.50
Style B: 4,000 lbs. cap. 75.00
f.o.b. Cincinnati

Carried easily to reels, job or storage.

Sold through wholesalers only.

WRITE TODAY FOR DETAILS

ROLL-A-REEL
327 WEST FOURTH STREET
CINCINNATI 2, OHIO

BREVITY—Identify by IEN - 1617 if you write the maker

STURDY, CONVENIENT, LOW-COST JIFFY ALL METAL CABINETS

FOR SMALL PARTS, DRILLS, TOOLS, CARBIDE TIPS AND MOUNTED POINTS

32 DRAWER UNIT • DIVIDES INTO 96 COMPARTMENTS
$8.95
POSTAGE PAID
64 DRAWER UNIT • DIVIDES INTO 192 COMPARTMENTS
$15.95

Rustproof Aluminum Drawers

Complete set of Dividers and Index Cards supplied.

APPROXIMATE SIZES
DRAWER 1¼" Deep 2¾" Wide 4" Long
32 DRAWER UNIT 6" Deep 12¾" Wide 15¼" High
64 DRAWER UNIT 6" Deep 25½" Wide 15¼" High

Spot welded steel cabinet, metal flange drawer guides, enamel finish and solid one-piece aluminum drawers in natural satin finish. The first multiple drawer metal cabinet for convenient storage of small parts, drills, tools, carbide tips, mounted points or assembly bench work at such a low cost. Order now for immediate delivery. Send check or money order or rated companies shipped on receipt of purchase order.

KAYTEE PRODUCTS
DEPT. L - Box 588 - CANTON, OHIO

BREVITY—Identify by IEN - 1618 if you write the maker

BARKSDALE

SOLE DISTRIBUTOR OF **MELETRON** PRESSURE ACTUATED SWITCHES

for industrial applications, offers a new pressure switch handbook to industrial users.

This new issue was compiled for greater convenience in selecting pressure sensing instruments: it includes a selection table based on functional requirements, and a glossary of terms to aid in specifying equipment.

The book covers the entire industrial pressure switch field: Meletron diaphragm type vacuum and low pressure switches, Meletron Bourdon tube high pressure switches, Barksdale piston type long life switches, and various special function units. Send for your copy.

BARKSDALE
1566 EAST SLAUSON AVENUE • LOS ANGELES 11 • CALIFORNIA

BREVITY—Identify by IEN - 1619 if you write the maker

Don't Underestimate the power of the BANTAM BULLY!

13,000 sharp, effective blows a minute! ...sharp enough to cut cold rolled steel!

The amazing Bantam Bully air hammer gives you real power in an easy-to-use size. It is 5" long and weighs only 22 ozs. Exclusive metering trigger regulates the power from a feather touch to a powerful blow. Full speed and power attained on less than 6½ C.F.M. of air.

Use it for scaling, chiseling, peening, tamping, cutting, routing, grooving, caulking, channeling, chipping, driving, drilling, marking, and hundreds of other applications.

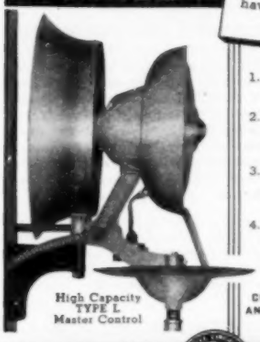
Write for full details on the Bantam Bully, Big Bully, Bully blow gun and the Bully Fulflo air filter.

Superior Pneumatic division of **Herbrand Tools**
4752 WARREN ROAD, GARFIELD HEIGHTS, OHIO

▼ BREVITY—Identify by IEN - 1620 if you write the maker ▼

AUTOMATIC HUMIDITY CONTROL

The Bahnson HUMIDIFIER combines in one unit the four basic requirements of industrial humidification that have proven especially successful.



High Capacity TYPE L Master Control

1. Atomizes water into a fine mist.
2. Diffuses the mist with room air until completely absorbed.
3. Distributes resulting humidified air uniformly throughout room.
4. Automatically controls the evaporation to maintain a constant relative humidity.

COMPLETE ENGINEERING AND SERVICE DEPARTMENT FOR CONSULTATION

Bahnson System
AIR CONDITIONING ENGINEERS
THE BAHNSON CO. WINSTON-SALEM, N. C.

E. C. STIMSON, A-3 VIRGINIAN APTS., GREENVILLE, SOUTH CAROLINA
E. H. ANDERSON, 314 EAST STREET, GROWN POINT, INDIANA
E. T. HODGDON, 1 CLARINA STREET, WAKEFIELD, MASSACHUSETTS
J. L. BROWN, 985 DRUMMY STREET, N. E., ATLANTA, GEORGIA
F. S. FRANBACH, 703 EMBREE CRESCENT, WESTFIELD, NEW JERSEY
DEWITT CLARK, 553 SOUTH FIGUEROA STREET, LOS ANGELES 13, CALIFORNIA

▼ BREVITY—Identify by IEN - 1621 if you write the maker ▼

ANNOUNCING the BW COPYFLEX®

a NEW machine to simplify copying

It's ideal for "desk-side" copying . . . needs no inks, stencils, trays, plumbing, exhausts or special room lighting.

Uses BW Diazo process, long employed by industry, to make low-cost positive copies. *First* machine specifically designed to use this quick, clean, easy process *anywhere* in your office.

▶ In seconds, the BW Copyflex gives you an exact, smudgeproof copy of anything typed, written or drawn.

▶ It's far cheaper and faster than ordinary methods for obtaining 1 to 100 copies. Copies 8½" to 11" in size average less than 2¢ for *all* costs.

▶ Can be located anywhere in your office—requires no installation. You, your secretary, or any office personnel can operate it easily, without special training.

Copying is so simple! If your letter, record, or document to be copied is on ordinary translucent paper, you simply insert it into the machine with BW Copyflex paper. Within seconds you receive a crisp, errorproof, smudgeproof copy—flat, dry, and ready for immediate use. The 100th copy is as sharp as the first.

If your original material is marked on both sides, or is on opaque paper, the machine quickly makes a BW reflex-film copy—which is then used to make the regular copies.

BW Copyflex is the fastest, least expensive way to make 1 to 100 copies of reports, records, orders, invoices — on letterhead, printed form or graph paper. It reduces paper work a hundred ways, saves time and cuts costs. See how BW Copyflex can help you . . . send for free booklet A-1078 today.

BRUNING

Specialists in copying since 1897

CHARLES BRUNING COMPANY, INC.

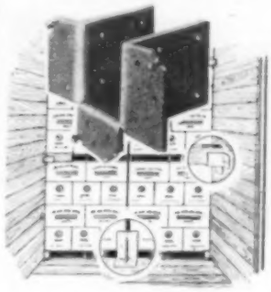
Dept. H-21, 100 Roade Street, New York 13, N. Y.

Copyright 1951, Charles Bruning Co., Inc.

▼ BREVITY—Identify by IEN - 1623 if you write the maker ▼

FASTENING . . Pressed steel cleat to secure freight in a car or truck

Source: NATIONAL DUNNAGE CO.
P. O. Box 4664-A, Dallas, Texas



New side-wall unit has been added to the company's line of steel cleats to secure loads for transportation without danger of shifting. The new unit secures by spiking to a car wall and forms a socket to take a crossbar brace. It is made in a number of sizes for 2 by 4-in. or other brace members. Peyton Spur Cleat is the designation. Each carries spur projections that drive into the car wall or floor to prevent movement of freight.

▼ BREVITY—Identify by IEN - 1624 if you write the maker ▼

PAINTING . . Priming liquid corrosion proofs ferrous metal surfaces

Source: PRUFCOAT LABORATORIES INC.
61-65 Main St., Cambridge 42, Mass.

Packaged in quarts to 5 gallon units

Type P-10 metal-reactive primer is a new liquid priming material for brush or spray application on old or moist ferrous-metal surfaces. It requires only moderate surface cleaning prior to application. It air dries in about 45 minutes. The material reacts to dry out excessive moisture, inhibit further corroding action and provide a surface for secure bond with succeeding coats of the company's metal finishing materials.

▼ BREVITY—Identify by IEN - 1625 if you write the maker ▼

CYLINDER . . Double acting pneumatic for one-way power action, air return

Source: MODERNAIR CORP.
4220-24 Hollis St., Oakland 8, Calif.

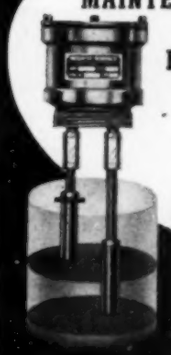
Three sizes in the company's new line of air-return cylinders employ 1⅛, 1¾ and 2½-in. bores in brass tubing, aluminum heads, stainless-steel piston rods. The cylinder is designed for power movement in one direction upon admitting air pressure through a three-way valve. At the end of the forward stroke a portion of the air is employed to return the piston to its starting point as soon as the valve is moved to exhaust position. Thus this air takes the place of a spring for the return movement.

Two designs for mounting include a hinged and a solid rear-flange bracket. Stroke is to specification.

All Makers of Those And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—Identify by IEN - 1626 if you write the maker ▼

MAINTENANCE FREE LEVEL CONTROL by PHOTOSWITCH



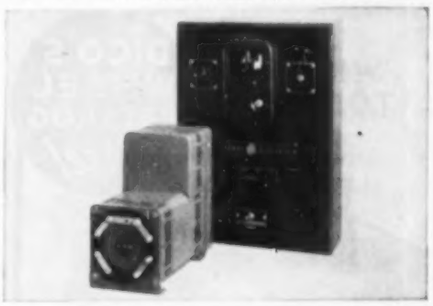
The modern efficient solution to level control problems.

Only a stainless steel probe enters the tank to make contact with the controlled liquid. Operates signals, valves, pumps. Provides single level control, on-and-off pump control, all kinds of pump programming. Special fittings for food and dairy installations.

For complete information, write for free Bulletin 2632

PHOTOSWITCH INCORPORATED
77 Broadway, Cambridge 42, Massachusetts

▼ BREVITY—Identify by IEN - 1627 if you write the maker ▼



FOR AUTOMATIC, DEPENDABLE, ACCURATE VOLTAGE REGULATION

OF LOW VOLTAGE CIRCUITS

This is the G-E automatic Inductrol with its control panel. Absolutely stepless, it giv s micrometer-fine regulation with auto-transformer efficiency. It provides an inexpensive method of securing an accurate, constant voltage for industrial and electronic applications where line voltages vary. Maintenance is negligible—Inductrols have no brushes to wear out.

They are available for use in single-phase 120-volt and 240-volt circuits rated 6 KVA and below. Voltage ranges of 10% or 15% raise and lower can be provided.

For providing a variable output voltage from a relatively constant supply voltage, G-E Inductrols are also available in hand- or motor-operated types. Write for Bulletin GEA-4508. *Apparatus Dept., General Electric Co., Schenectady 5, N. Y.*

GENERAL ELECTRIC

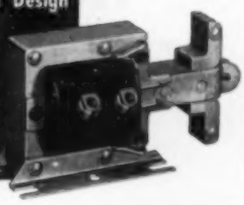
436-77

▼ BREVITY—Identify by IEN - 1628 if you write the maker ▼

Superior Solenoid Performance

Patented Soreng TT Design Assures . . .

- More Power
- Dependable Operation
- Long Service Life
- Lowest Cost Per Work Unit



In solenoids, performance *counts!* That's why so many of America's largest manufacturers look to Soreng for *all* their needs.

Outstanding advantages of Soreng's patented TT design are:—

- More pull per unit volume.
- Double shading coils to provide quiet operation and higher sealing pull.
- Less heating.
- Uniform characteristics over entire service life
- Exceptionally rugged construction.
- Lowest cost per work unit of any solenoid.

So why settle for less than the *superior* solenoid performance Soreng Solenoids provide? Write today for free copies of our solenoid bulletins. No obligation. Address Dept. A12.

America's Largest Manufacturer of Solenoids

SORENG MANUFACTURING CORPORATION
9555 Eden Ave., Schiller Park, Ill. (Chicago Suburb)
Plants: Schiller Park, Ill. Fremont, Ohio

▼ BREVITY—Identify by IEN - 1629 if you write the maker ▼

PRECISION *Control*

***by* POWERS**

IMPROVES PRODUCTION - LOWERS COSTS

End losses caused by *over* and *under* heating of processes or operations requiring precise control. Install Powers air operated temperature regulators. Their accurate control helps to improve quality of products and speed up production.

WRITE FOR BULLETIN 370

THE POWERS REGULATOR COMPANY
2737 Greenview Ave. Chicago 14, Ill.
Offices in 50 Cities—59 years of Temperature Control

BREVITY—Identify by IEN - 1630 if you write the maker

WRITE TODAY!

DICO'S WHEEL CATALOG Free!

A UNIQUE CATALOG SIMPLIFYING YOUR WHEEL ENGINEERING PROBLEMS

A MODERN LINE OF INDUSTRIAL RUBBER WHEELS DIAMETER 6"—18"

DICO CORPORATION
402 S.W. 16TH ST., DES MOINES 5, IOWA

BREVITY—Identify by IEN - 1631 if you write the maker

UNIVERSAL

EXPANDED METAL FLOOR TRUCKS

- Greater Economy
- Greater Utility

MODEL 4-A
Length 60", width 30", height 30".

Literature Mailed Promptly Upon Request

MODEL 4-B
Length 60", width 30", height 48".

Durable, highly maneuverable, economically priced. Designed to meet a wide range of material handling jobs. Rigid angle iron frame. Equipped with four 4" ball-bearing fiber casters—swivel casters centered at front and rear; rigid casters centered on each side. Model 4-B has hinged drop panel on side equipped with positive safety latches.

- Also other types of expanded metal containers in sizes and quantites to customer's specifications.

INDUSTRIAL ENGINEERING & MFG. CO., INC.
BRIMFIELD, INDIANA, U.S.A.

BREVITY—Identify by IEN - 1632 if you write the maker

Industrial CRANES

Improve Your Profit!

HANDLE MATERIAL TO AND FROM OPEN CARS TRUCKS AND MACHINES AT LOWER COST

Pillar Cranes Up to 6 Tons Rotate 360 Degrees.

INDUSTRIAL EQUIPMENT CO.
321 NORTH ADA STREET CHICAGO 7, ILLINOIS
Write for Catalog. Representatives in Principal Cities.

BREVITY—Identify by IEN - 1633 if you write the maker

REFRIGERATING . . Cooling tower absorbs heat from condensing water

Source: SANTA FE TANK & TOWER CO.
5403 S. Boyle Ave., Los Angeles 11, Calif.

Cooling water from which heat is to be removed is pumped to the top of this new standardized assembly of the company's Series-V cooling tower. It is delivered to flow by gravity in even distribution down through the slat decks or by spray heads to the decks in one or the other of two available designs. It collects for recirculation to small installations of air conditioning and refrigerating that employ water-cooled refrigerant condensers.

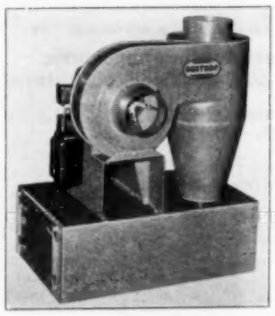
A blower of multiple-blade construction is mounted at the top of the housing and is belt-connected to a ball-bearing motor. It draws air in for evaporative cooling action through louvers at the base of the unit and up in counterflow with the air. It passes through moisture eliminators to reach the blower for discharge from the housing top.

The complete line includes a Series-H with horizontal air movement and a Series-C cylindrical in section with vertical air flow as well as the rectangular vertical Series-V. All are prefabricated and delivered ready for installation. Each is available in a range of sizes and capacities. Construction is in metal or wood enclosure with redwood slat decks in assembled removable sections arranged in multiple.

BREVITY—Identify by IEN - 1634 if you write the maker

DUST COLLECTING . . Separator unit removes dust from air at a machine

Source: AGET-DETROIT CO.
401 Main St., Ann Arbor, Mich.



Dust, wood chips, lint are drawn through the 5-in. inlet to the motor-driven blower in this new Model 8N50 Dustkop collector. The laden air is driven into the cyclone separator mounted beside the blower. The foreign matter separates out in the cyclone to fall to a drawer in the base. The cleaned air is exhausted out of doors through a suitable connection to the cyclone top at the upper right.

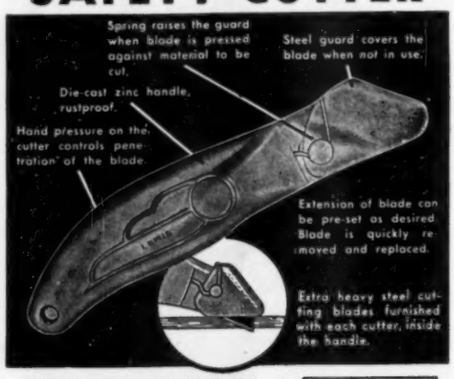
Rating is 885 cfm. with 3-in. static suction pressure, sufficient to serve two grinding, buffing or polishing wheels to 12 in. in diameter or the equivalent in woodworking machinery or handling equipment employed in dust-producing services. Base dimensions are 20 by 28 inches. The motor rates ¾ hp.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1635 if you write the maker

A New Invention . . . Safe . . . Different

LEWIS Automatic SAFETY CUTTER



Here is a new patented knife that cuts swiftly, surely, safely . . . yet protects the user from injury. Always safe because the blade is guarded — always ready to use because there's nothing to adjust.

$1.50

FLASH BOX OPENER CO., Inc.
52 W. Houston St. • New York 12, N. Y.

BREVITY—Identify by IEN - 1636 if you write the maker

CANNON PLUGS

GREATEST VARIETY OF ELECTRIC CONNECTORS FOR MOST ELECTRICAL AND ELECTRONIC USES

CANNON ELECTRIC QUICK-DISCONNECT PLUGS AND RECEPTACLES save time and money in assembly, servicing and inspection of electrical and electronic equipment. Used extensively in aircraft, radio, geophysical instruments, television, public-address systems, industrial controls, communications, motors, x-ray equipment, recorders, cameras, etc., etc.

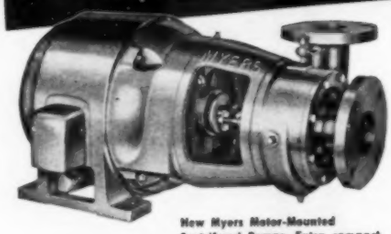
ALSO a full and complete line of SIGNAL EQUIPMENT for hospitals and industrial concerns; Conduit Fittings, specialty lights, etc., Direct-Current Solenoids.

Cannon Electric Development Company, Division of Cannon Manufacturing Corporation, 3209 Humboldt St., Los Angeles 31, Calif. Canadian factory: Toronto, Ont. World export: Frazar & Hansen, San Francisco, New York and Los Angeles.

CANNON ELECTRIC

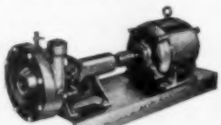
BREVITY—Identify by IEN - 1637 if you write the maker

New Myers Centrifugal Pumps...



New Myers Motor-Mounted Centrifugal Pumps. Extra compact. Exceptionally rugged. Perfectly aligned and balanced impeller. Sizes, 1 H.P. to 20 H.P.

New Myers Belt-Driven Centrifugals. V-Belt or flat belt drive. Oversize shaft is removable from either end of pump.



New Myers Direct-Connected Centrifugals. Available with or without motor. Sizes, ½ H.P. to 10 H.P.

pay for themselves in savings alone!

This outstanding new Myers line of Centrifugal Pumps features highest interchangeability of parts; replaceable wearing rings; shafts fully protected against liquids and wear; easy replacement of casing and impeller to suit changing conditions. And these are but a few of the many advantages combined in these latest Myers Pumps—improvements that guarantee greater operating efficiency and economy under steadiest, hardest service. New Myers Centrifugal Pumps are available in types to handle any liquid, at temperatures to 200° F. Capacities range from 10 to 650 gpm., against heads up to 280 ft. Specifications and name of nearest distributor sent on request.

Write for full list of sales features — offered for the first time in New Myers Centrifugal Pumps!

TAKE OFF YOUR HAT TO MYERS

THE F. E. MYERS & BRO. CO.
Dept. T-219, Ashland, Ohio

▼ BREVITY—Identify by IEN - 1639 if you write the maker ▼

TAKE A LESSON FROM THE BIG USERS...

TRIPLE PRODUCTION WITH ROBERTSON WHEELS

Longer wheel life, increased output, saving in power and production costs—these are the advantages you can expect when you use Robertson Vitrified and Resin-Bonded Grinding Wheels in your shop.

A motor-shaft manufacturer using a conventional wheel on a Landis to remove .015" to .020" stock from SAE 1040 steel (plus .001" minus .000"), was able to finish only 10 pieces per wheel dressing. With the substitution of a Robertson Wheel—and with no other change in grinding method—production immediately jumped to 30 pieces per wheel dressing.

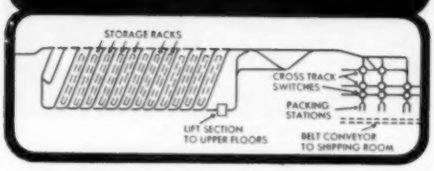
Production records like this are an everyday occurrence in hundreds of industries using Robertson Wheels. You can duplicate them. Blueprint your grinding problem and let us show you how. Or send for the informative booklet "How to Buy Production Time."

ROBERTSON
MANUFACTURING COMPANY
TRENTON 5, NEW JERSEY

Resin-Bonded and Vitrified-Bonded Grinding Wheels • Mounted Wheels • Segments

▼ BREVITY—Identify by IEN - 1640 if you write the maker ▼

SYSTEM *speeds* ORDER MAKE-UP



A large Eastern wholesale drug company raised their order make-up department to top efficiency by installing a Louden Monorail System. Such systems are adaptable wherever lots of small articles are made up from diversified stock.

A hand-pushed system operating throughout a multi-story building, the Monorail installation has increased storage capacity to a maximum, while permitting greatest accessibility to the shelving. Truck and floor maintenance has been eliminated, as has damage of goods resulting from collisions.

Movement between floors is accomplished with standard Louden track lift sections.

WRITE FOR FREE BOOK

Case histories of successful Monorail applications in many different types of industries are contained in an illustrated book called, "Economical Material Handling," free on request.

THE LOUDEN MACHINERY COMPANY
204 S. Superior Ave., Fairfield, Iowa

Louden
OVERHEAD MATERIAL HANDLING

▼ BREVITY—Identify by IEN - 1642 if you write the maker ▼

WOOD WORKING . . Portable saw, motor drives 6¼ in. circular blade

Source: MID-WEST SALES ENGINEERS INC.
822-26 Lemcke Bldg., Indianapolis, Ind.

List price is about $47 for this new Ram-Saw portable electric saw. It can be set for any cut depth to 2⅛ in. when cutting square. It has angular adjustment to 45 degrees. Drive is by a ¾-hp. universal 110-volt motor for free rotation at 4,200 rpm.

Assembly is in a ventilated aluminum housing for overall length of 12¼ in., width at 12 in. with a shoe and fence or 9½ in. without the fence. Weight is 10 pounds. The trigger switch must be held down to maintain operation as a safety measure. A lower safety guard covers the blade which is mounted on the right-hand side of the unit to keep weight on the uncut work and to provide good visibility. The company sells only to wholesalers and will forward your inquiries to the authorized organization in your location.

▼ BREVITY—Identify by IEN - 1643 if you write the maker ▼

CORROSION PROOFING . . Liquid forms waxy film on finished surfaces

Source: SWAN-FINCH OIL CORP.
30 Rockefeller Plaza, Room 1605, New York 20, N. Y.

Water, moisture cannot penetrate

Saf-pHilm rust preventive is a new dark-colored solvent-type liquid material for brush, dip or spray application on finished machined surfaces and parts. The liquid dries in air in about 15 minutes to form a flexible film about .002 in. in thickness over the metal.

The film is transparent, waxy, semi-tacky and has self-healing ability in the event it is scratched in handling. It can be removed with kerosene or a solvent the company will supply. The film is resistant to attack by acids and alkalis. It will protect against corrosion for long periods.

▼ BREVITY—Identify by IEN - 1644 if you write the maker ▼

DRILLING . . Threaded shank drills for multi-spindle close center work

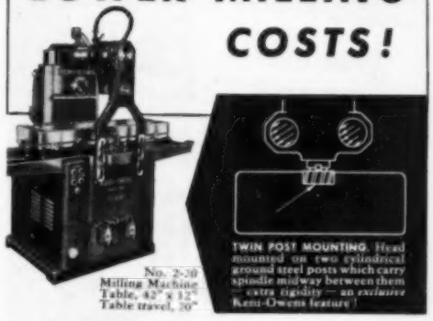
Source: ZAGAR TOOL INC.
23878-82 Lakeland Blvd., Cleveland 23, Ohio

Immediate service is offered by the company to supply drills for close-center work in which the shank carries ground threads to apply in threaded adapters in multiple spindles. Thread grinding is recommended but the threads also can be die cut or rolled. Sizes in the line range from .078 to .625 inch. Thread sizes are No. 2-56 to ⅝-in., 11.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 1645 if you write the maker ▼

LOWER MILLING COSTS!

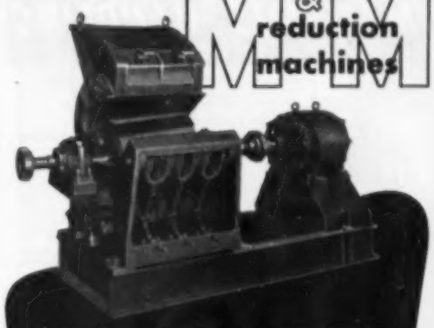


Kent-Owens builds 'em *rugged* . . . *simple* . . . and *versatile* . . . machines adaptable to countless milling jobs. Designed for rapid, easy set-up and cost-saving operation. Extra rigid head mounting assures balanced load. Greater cutting efficiency with smooth, powerful cutter drive—only two gear contacts, motor to cutter. Write for bulletins on wide range of hydraulic and hand-operated machines. Kent-Owens Machines Co., Toledo, Ohio.

KENT-OWENS
Milling Machines

▼ BREVITY—Identify by IEN - 1646 if you write the maker ▼

M&M reduction machines

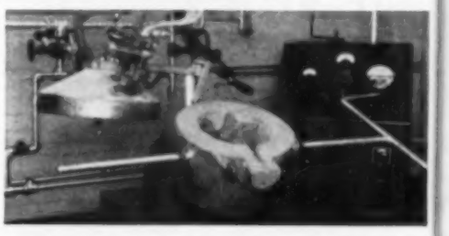


M & M Reduction Machines are rapidly gaining favor in industry for converting waste to uniform size for easy handling and in many cases into valuable by-products. Cut your disposal costs with an M & M Reduction Machine. Send us your problems.

MITTS & MERRILL
1014 South Water • SAGINAW, MICHIGAN

▼ BREVITY—Identify by IEN - 1647 if you write the maker ▼

GOT A small METAL-MELTING PROBLEM? *Here is an efficient economical answer!*



15 lb. capacity, Pot Tilting Electric Furnace melts any metal quickly, easily

A versatile small furnace for laboratory, pilot plant and small production. Engineered for economy. Designed for easy, practical use. Pot can be used as crucible or tilted to pour directly into molds. Roof lifts and swings for easy loading. Complete with controls. Literature on request.

WRITE FOR DETAILS

DETROIT ELECTRIC FURNACE DIVISION
KUHLMAN ELECTRIC COMPANY
1050 26th St. • BAY CITY, MICHIGAN

Foreign Representatives: In BRAZIL — Equipamentos Industriais "Elsa" Ltd., Sao Paulo; CHILE, ARGENTINA, PERU and VENEZUELA: M. Castolvi Inc., 150 Broadway, New York 7, N. Y.; MEXICO: Casas, S. de R. L. Atenas 32, Despacho 14, Mexico City, D. F.

▼ BREVITY—Identify by IEN - 1648 if you write the maker ▼

The BRUTE

ARO HEAVY DUTY VERTICAL GRINDER

- **IT'S BIG** . . . yet weighs only 11 lbs.!
- **BIG POWER** . . . try it . . . find out for yourself!
- **BIG TIME PERFORMANCE** . . . easy to handle . . . safety throttle.
- **TRY IT** . . . contact your ARO distributor for an on-the-job demonstration.

The Aro Equipment Corporation, Bryan, Ohio
Aro of Canada, Ltd., Toronto, Ontario

ARO
AIR TOOLS
Also . . . LUBRICATING EQUIPMENT . . . HYDRAULIC EQUIPMENT . . . AIR CRAFT PRODUCTS . . . GREASE FITTINGS

BREVITY—Identify by IEN - 1649 if you write the maker

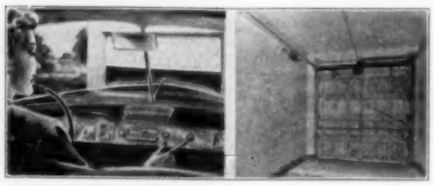
BREVITY—Identify by IEN - 1650 if you write the maker

BREVITY—Identify by IEN - 1651 if you write the maker

BREVITY—Identify by IEN - 1652 if you write the maker

DOOR OPERATOR . . Motor drive and control for Rol-Top garage doors

Source: KINNEAR MFG. CO.
4002 Fields Ave., Columbus 16, Ohio



List price ranges from $170 to $200, depending on number ordered, for the company's new motor-driven magnetically-controlled garage-door operator. It is designed to apply on the Rol-Top single or double garage door, is suited for use on installations of company garages as well as for private homes. The 110-volt motor and its controls with switches to turn garage lights on and off with opening and closing movements are mounted in the garage.

A magnetic switch operating on low voltage is installed in the driveway in front of the door. The actuating control assembles a pushbutton on the vehicle dashboard, a magnetic signaling device under the vehicle and is powered by the vehicle battery. A key-operated switch can be added outside.

BREVITY—Identify by IEN - 1653 if you write the maker

LIGHTING . . Slide type hanger for company's fluorescent fixtures

Source: SYLVANIA ELECTRIC PRODUCTS INC.
1740 Broadway, 16th Flr., New York 19, N. Y.

One installer can place it

Quick Grip is a new design of hanger for support of the company's Triminline fluorescent fixtures from any convenient point under a ceiling. Two of the hangers are employed for each fixture in assembly on stems that can be secured to existing ceiling supports. The fixture slides into place and is held by a locking screw.

BREVITY—Identify by IEN - 1654 if you write the maker

SCREW DRIVING . . Friction clutch attachment for portable tool use

Source: HERBRAND DIVISION
1009-13 Stone St., Fremont, Ohio

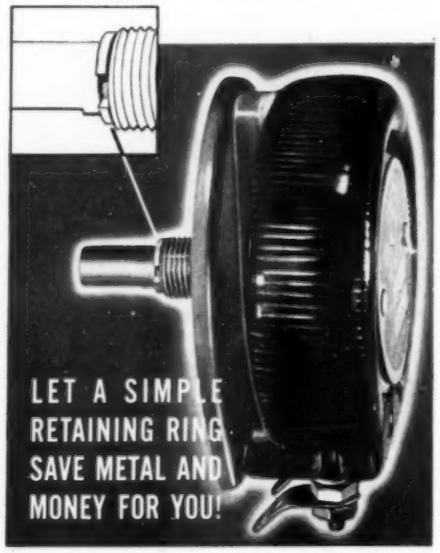
Dril-O-Driver is a new friction-clutch attachment that fits in the chuck of a ¼-in. electric or pneumatic drill and takes a screw-driver bit or a nut-running chuck or driver. The clutch rides free until the operator applies pressure. It releases when a screw or bolt is driven tight. It can be operated in driving or retracting direction.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1655 if you write the maker

BREVITY—Identify by IEN - 1656 if you write the maker

BREVITY—Identify by IEN - 1657 if you write the maker



On this finely made rheostat retaining rings saved material and assembly time. They save money both for Hardwick Hindle, the manufacturer, and for its customers.

Looking at this application you may say it was obviously a "natural," but there are literally thousands of cases where retaining rings can save as much or more.

Examine your machines and products to see where the use of these inexpensive modern artificial shoulders can cut your costs.

It's needlessly expensive to hold a mechanism in place with unnecessarily big shoulders or collars, or to temporize with small cotter pins etc., etc.

Let us show you how these high grade steel rings can do a thoroughly efficient job, saving money for you and for your customers.

More and more applications of retaining rings are being made every day.

Write today for descriptive folder.

THE NATIONAL LOCK WASHER CO.
NEWARK 5, NEW JERSEY • MILWAUKEE 2, WISCONSIN

BREVITY—Identify by IEN - 1659 if you write the maker

REALOCK

PROTECTION PLUS

All fittings, hinges and locking devices have bolts *on the inside,* secure from tampering.

Heavily galvanized by a special process, Realock Fence is weather-resistant, extra strong and durable...costs little or nothing for maintenance. Supplied only with malleable base with pressed steel arms (inset) in the East.

For complete details refer to Sweet's Catalog. For free estimate consult your classified telephone directory—or write direct.

REALOCK FENCE CF&I

WICKWIRE SPENCER STEEL DIVISION 361 Delaware Ave., Buffalo 2, N.Y.
THE COLORADO FUEL & IRON CORP. Continental Oil Bldg., Denver 2, Col.
THE CALIFORNIA WIRE CLOTH CORP. 1000 - 19th Avenue, Oakland 6, California
BRANCHES & DISTRIBUTORS IN KEY CITIES EVERYWHERE

BREVITY—Identify by IEN - 1660 if you write the maker

IT COSTS *no more* **TO USE**

LAUSON

HIGH QUALITY POWER!

The extra features . . . and expensive engineering found in Lauson engines actually cost no more — yet they add immeasurably to the smoothness of Lauson power, and, of course, are important to Lauson's recognized fame as the "long-life" engine! Check the Lauson features yourself — and you'll use Lauson power for your equipment!

KNOWN FOR ITS *value*

VALUED FOR ITS *name*

Another advantage in Lauson power is its consumer fame . . . for LAUSON is a 50-year old name that is advertised to over 20 million people!

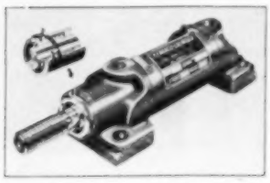
OUTBOARD MOTORS
LAUSON
PORTABLE ENGINES

The Lauson Company
New Holstein, Wis., Division of Hart Carter Company
In Canada: Hart-Emerson, Winnipeg, Canada

BREVITY—Identify by IEN - 1662 if you write the maker

CYLINDER . . Air and hydraulic units equipped with cartridge packing gland

Source: PETCH MFG. CO.
36102 Harper Ave., Mount Clemens, Mich.



E-Z-Pak is a new cartridge packing gland fitted with packing rings to seal around a cylinder piston and a rubber O-ring to seal in the cylinder head. A snap ring engages slots to hold the assembly in place when it has been slipped over the rod and into the head. The cartridge unit also contains piston-supporting throat bushings made of bearing bronze and a bronze seal-guard scraper to keep the piston clean as it passes into the packing area. Replacement requires only compression on the retaining-ring fingers to free the cartridge so it can slide out.

The company offers the new gland only in connection with cylinders of its own manufacture. These range in bore from 2 to 10 in. for air and from 2 to 6 in. for hydraulic pressure. Type of mounting and stroke length as well as special cylinder characteristics are subject to specification.

BREVITY—Identify by IEN - 1663 if you write the maker

MOTOR CONTROL . . Combination unit for starting, protecting, disconnecting

Source: WESTINGHOUSE ELECTRIC CORP.
511 Wood St., Dept. IEN, Rm. 1110, Pittsburgh 30, Pa.

Three padlocks can be employed

Class 11-206-N is a new combination of motor starter, motor protection and disconnect in a rectangular housing. The unit is available for across-the-line starting of squirrel-cage motors or as a primary switch for motors with wound rotors. The assembly includes the new Life-Linestarter, and AB De-ion circuit breaker and a slam-proof self-indicating interlocked handle.

Capacities range from ¼ to 100 hp. on 110 to 600-volt polyphase ac. NEMA sizes are No. 0 through No. 4 with enclosures from No. 1 to No. 9. The breaker provides for delayed tripping on safe overload, instant action on short circuit.

BREVITY—Identify by IEN - 1664 if you write the maker

FASTENING . . Hexagon lock nut floats in base for anchoring uses

Source: BOOTS AIRCRAFT NUT CORP.
50 John St., Stamford, Conn.

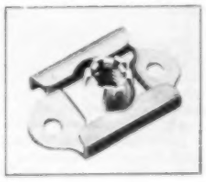


Plate-Lok is a new assembly of the company's Tex-Lok nut in which the nut is secured in compensating floating position in a base plate made of aluminum, steel, stainless steel as required. The nut is available in 8-32, 10-32 and ¼-28 sizes with its locking flange sections in the same design as previously in use for some time, primarily in aircraft.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1665 if you write the maker

don't let **BREAKAGE·MANPOWER WASTE·PRODUCTION LOSS·SABOTAGE YOUR PLANT**

IT CAN'T HAPPEN WITH **PROTECTRON**

Production continuity is the keystone of this country's defense program, and Protectron can play an essential part in keeping your industrial machinery running smoothly.

Protectron senses minute increases in mechanical load and automatically "trips" machines before damage occurs.

Not only does Protectron eliminate tool and die breakage, but its vigilant protection increases one operator's efficiency 4 times by enabling one man to operate 4 machines, thus releasing 3 men for other work. It is adaptable to almost every automatic machine where damage to tools, dies and equipment would mean expensive replacements and loss of valuable production time.

The Brinnell Company
GRANBY, CONN.

BREVITY—Identify by IEN - 1666 if you write the maker

Do You Have This Data on HydrOILic Motors, Pumps, Valves ?

Send for **FREE** *copies today*

You'll find better answers to almost every hydraulic circuit need in the big line of HydrOILic Valves, Pumps, Fluid Motors and similar equipment. Designed for high pressure usage, they give added dependability for *any* pressure range. Your files aren't complete without these up-to-date bulletins. We'll rush the ones you want promptly, without obligation.

The DENISON Engineering Co.
1150 Dublin Rd., Columbus 16, O.

DENISON HydrOILics

BREVITY—Identify by IEN - 1667 if you write the maker

YOURS FOR THE ASKING

EX-CELL-O's COMPLETE BUSHING GUIDE

XLO

Here is the bushing buyer's most useful tool—a complete listing of styles and sizes of A.S.A. Standard Drill Jig Bushings carried in stock by Ex-Cell-O at Detroit, New York, Los Angeles, and Toronto. If you have not yet received your copy of Bulletin 33371, write to Ex-Cell-O today.

EX-CELL-O CORPORATION
DETROIT 32 • MICHIGAN

BREVITY—Identify by IEN - 1668 if you write the maker

buell KNOWS DUST RECOVERY

Buell Ivan Tongaron Cyclone

Buell "SF" Electric Precipitator

Combination Cyclone-Precipitator Unit

WHENEVER industrial engineers discuss valuable dust recovery, Buell is the big name mentioned. For Buell offers knowledge and capabilities in dust recovery second to none. Only Buell Precipitator recovers ultra-fine dust with "Stedi-flow" dust fall—continuous cycle rapping that means constant peak efficiency. Buell large diameter cyclones do not plug, require next to no maintenance. Complete details on both types of equipment are available. Buell Engineering Co., Suite 5030, 70 Pine St., New York 5, N. Y.

buell

Engineered Efficiency in **Dust Recovery**

BREVITY—Identify by IEN - 1669 if you write the maker

STOP DUST IRRITATION ...with NEW Sensational Flex-a-foam FILTER MASK

Trial Sample $1.50 Postpaid

Easier to breathe through and talk through than an ordinary pocket handkerchief — yet filters non-toxic nuisance dusts as small as 1/25000 of an inch.

Extremely light weight—only 1 oz. complete.
Self-adjusting to every face size.
Attractively styled to suit the most discriminating wearer.
Simple in design: only four parts—four tough, long-wearing, interlocking parts.
Only respirator made with long-lasting washable filter—can be used over and over again.

Write TODAY for Descriptive Circular

Here's dust protection... your workers will welcome and WEAR!

THE GOGGLE PARTS COMPANY
1468-70 W. 9th Street • Cleveland 13, Ohio

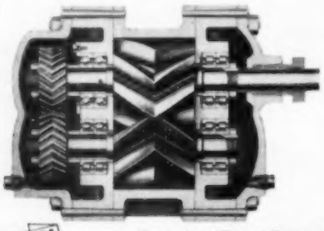
BREVITY—Identify by IEN - 1670 if you write the maker

WARREN-QUIMBY ROTEX PUMPS are *Versatile*

For pumping lubricating, non-lubricating and viscous liquids such as acids, alkalis, coolants, diesel oil, dyes, fuel oil, gasoline, inks, lube oils, molasses, paints, paraffine, shellac, solvents, syrup, tar, varnishes and many other liquids.

TWO GENERAL TYPES AVAILABLE: Gear-in-head for clear liquids having sufficient lubricating qualities to protect driving gears and bearings. External gear and bearing for non-lubricating liquids, such as gasoline, heavy tars, asphalts, acids, etc.

Warren Plant Facilities, Dependability, Quality and Service now behind WARREN-QUIMBY Pumps.



Your inquiries on Rotex and Screw types, as well as Warren's complete line of Centrifugal and Reciprocating Pumps are solicited.

IEN-6

WARREN QUIMBY PUMPS

WARREN PUMPS

WARREN STEAM PUMP COMPANY, INC. • 62 Bridges Ave. • Warren, Mass.

BREVITY—Identify by IEN - 1671 if you write the maker

AT YOUR FINGERTIPS

A must for your bench — Horberg Drill Size, Pin Gages. Unlimited time and cost saving advantages in center and location finding, hole or slot gaging.

- Held Accurate to +.0001 −.0000
- Concentric tapered to fit holes .0012 smaller than gage size.
- 1½" in length for easy insertion
- Highest quality oil hardened tool steel
- In convenient indexed stand for quick selection

Letter sets of 52 gages, A-Z in pairs
Fraction sets of 60 gages, 1/64" to 1/2" in steps of 1/64" in pairs
Number sets of 120 gages, 1 to 60 in pairs
Individual gages in stock
Extra stands available

All Items Stocked for Immediate Delivery

FROM THE Horberg GAGE COMPANY
31 STAPLES ST., BRIDGEPORT, CONN.

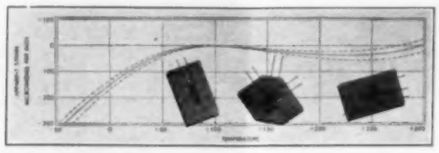
Quantity
..... Letter Sets @ $45.
..... Fraction Sets @ $50.
..... Number Sets @ $90.
..... Single gages @ $ 1.
..... Stand alone @ $10.

Please Rush checked items and literature to
Company .....
Address .....
Name .....
Title .....

BREVITY—Identify by IEN - 1672 if you write the maker

GAGE . . Resistance wire strain unit is compensated for temperature change

Source: BALDWIN-LIMA-HAMILTON CORP.
Paschall Post Office, Philadelphia 42, Pa.



New design in the company's Type SR-4 bonded-resistance-wire strain gage includes a unit that is self-compensating for temperature variation. The new unit is available for use on duralumin and steel in the form of single and double elements and rosettes. They eliminate need for a second strain gage to compensate for temperature change in a strain-measuring installation.

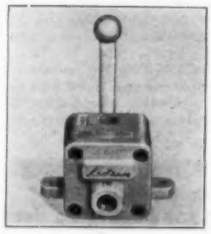
Two ranges are 50 to 300 deg. F. and minus 50 to plus 300 deg. F. Single-element units are in stock in four lengths between ¼ and ⅞ inch. The double and rosette units are to specification at this time.

The design follows standard construction previously developed by the company in bonding the fine wire grid to a paper base or into a thin matrix of paper impregnated with Bakelite. The units are cemented to parts and structures for test so they will be stressed in tension or compression. The resulting change in electrical resistance is measured by a Wheatstone bridge and galvanometer or electronic equipment.

BREVITY—Identify by IEN - 1673 if you write the maker

VALVE . . Pneumatic and hydraulic, 2 to 4-way operating unit, to 250 lb.

Source: LEDEEN MFG. CO.
1602 S. San Pedro St., Los Angeles 15, Calif.



Lever operation, as illustrated or foot or piston operation with finger, solenoid, pilot and stop-controlled automatic cylinder actuation are all available in the company's new line of operating valves. The units apply in pneumatic or hydraulic lines for pressure to 250 pounds. They are particularly suited to operate the line of power cylinders which the company also manufactures.

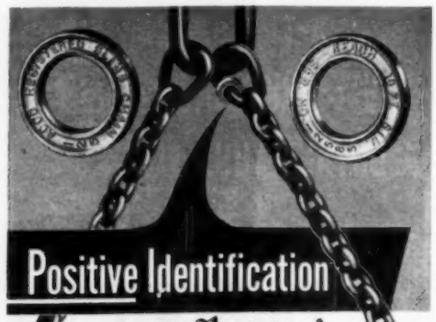
Six sizes in the line are fitted with ¼ to 1-in. connection ports and have bases measuring 4 to 7¾ in. in length. Body height is 2½ to 5¼ inches. Each size is made in fourteen arrangements for holding and non-holding action by hand, foot, finger, solenoid, cylinder.

Bulletin 510, 4 pages, presents illustrations showing the rotating-disc design, drawings of typical hookups to power cylinders, dimensions in given assemblies, includes brief description of each of the fourteen arrangements. A picture page shows typical cylinder designs.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 90

FIND WHAT YOU WANT?
Check the hundreds of subjects in the Index, page 102

BREVITY—Identify by IEN - 1674 if you write the maker



ACCO Registered SLING CHAINS

Don't guess that a certain sling chain will lift an expensive machine. Select the types, sizes, and materials needed for your work from the complete line of ACCO Registered SLING CHAINS. The positive identification ring on each one assures you that the unit was rigidly inspected and fully tested. *Send for* Catalog DH-80 *on selection, use, and care of sling chains.*

ACCO York, Pa., Atlanta, Chicago, Denver, Detroit, Los Angeles, New York, Philadelphia, Pittsburgh, Portland, San Francisco, Bridgeport, Conn.

AMERICAN CHAIN DIVISION
AMERICAN CHAIN & CABLE

In Business for Your Safety

BREVITY—Identify by IEN - 1675 if you write the maker

the new APCO TORQUE WRENCH "CLICKS"

...warns worker when preset tension is reached!

Apco Tension Drivers, available in four standard sizes. 0-25, 0-6, 0-12, 0-80 inch lbs. Interchangeable heads on two largest sizes.

Simplifies mechanical operations and eliminates "guesswork" on assembly and maintenance work — particularly in hard-to-get-places—wherever nuts, bolts, and studs require specific tensioning. Made with dial for accurate preset tension, this wrench makes a distinctly audible "click" when preset torque is reached. Unaffected by temperature change or jarring, guaranteed accurate. Apco Torque Tools—made of heat-treated nickel steel—are available in both visible and preset dial models—in sizes from zero to 280 inch grams., up to 2,000 ft.-lbs.

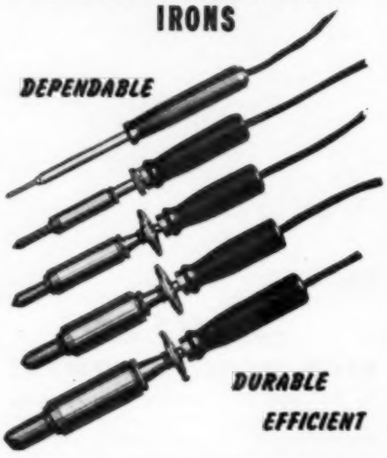
SEND FOR DESCRIPTIVE FOLDER TODAY!

APCO MOSSBERG CO.
161 LAMB ST., ATTLEBORO, MASS.

BREVITY—Identify by IEN - 1676 if you write the maker

American Beauty

ELECTRIC SOLDERING IRONS



are sturdily built for the hard usage of industrial service. Have plug type tips and are constructed on the unit system with each vital part, such as heating element, easily removable and replaceable. In 5 sizes, from 50 watts to 550 watts.

TEMPERATURE REGULATING STAND

This is a thermostatically-controlled device for the regulation of the temperature of an electric soldering iron. When placed on and connected to this stand, iron may be maintained at working temperature or through adjustment on bottom of stand at low or warm temperature.

Write for Catalog Sheets, Form No. 204-CP. Dept. SI-2

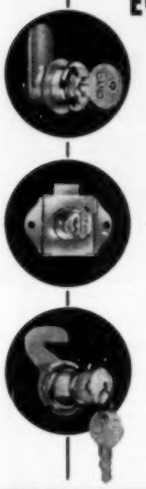
120-3

Since 1894 Always Dependable

AMERICAN ELECTRICAL HEATER CO.
DETROIT 2, MICHIGAN

BREVITY—Identify by IEN - 1678 if you write the maker

SPECIALIZING IN ORIGINAL EQUIPMENT LOCKS



ILLINOIS

CABINET LOCKS

Hundreds of styles and sizes in cabinet locks for wood or metal installations available for original equipment applications.

Illinois Lock engineers are always ready to cooperate with you in working out special locking problems.

For a complete service of your next lock problem—call Illinois.

DUO LOCKS—Finest in lock quality—practically unlimited key specifications—virtually pickproof—non-duplicatable style keys.

ILLINOIS LOCKS—Economy price cylinder locks—many key changes—construction avoids failure due to dirt or freezing.

ILLINOIS

THE ILLINOIS LOCK COMPANY

822 SOUTH ADA STREET • CHICAGO 7, ILLINOIS

BREVITY—Identify by IEN - 1679 if you write the maker

ALCOA Aluminum Tube

Figure it per foot. It's the lowest cost corrosion-resistant tube you can buy—strong but lightweight, easy to handle, easy to form and flare...

Installation outdoors? Alcoa Tube gives you excellent corrosion-resistance. And, inside or outside, you save 40%. The low per-foot price makes a big difference on complete installations.

Look under "aluminum" in your classified telephone directory—call your nearby Alcoa Distributor.

NOTE: Due to rearmament, aluminum is not available for unrestricted industrial use. However, when tubing is used, extensive engineering and planning are required. This advertisement is intended to help you with your planning.

Aluminum Fittings Are Made By Nationally Known Manufacturers

Free SPECIAL BOOK ON INSTRUMENT LINES

Write now for Alcoa's new book "Instrument Lines of Alcoa Aluminum" . . . illustrated and crammed with facts! Address: ALUMINUM COMPANY OF AMERICA, 8368 Gulf Bldg., Pittsburgh 19, Pennsylvania.

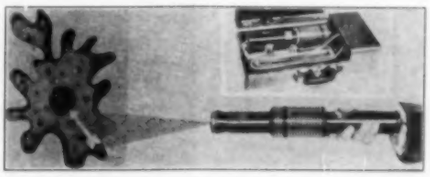
ALCOA

ALCOA Coiled Tube ALUMINUM

BREVITY—Identify by IEN - 1681 if you write the maker

PROJECTING . . Electric hand unit positions indicating pointer on screen

Source: EDNALITE OPTICAL CO.
35 N. Water St., Peekskill, N. Y.



New electric unit is known as a projection pointer. It places and permits movement of a sharply defined color-free pointer on a projection screen to enable the operator of a picture projector to point out essential features. Application is in connection with projected slides, charts, graphs, maps, photographs, diagrams, mechanical drawings, building plans.

The pointer is made of light metals in the general form of a flashlight. It operates on 110-volt ac., has a built-in transformer. It is supplied with a 25-ft. detachable cord and is packaged in a leatherette-lined wood carrying case. List price with cord and case is $49.50.

BREVITY—Identify by IEN - 1682 if you write the maker

PLYWOOD . . Made in long lengths by scarf jointing standard panels

Source: ANACORTES VENEER INC.
51 Main St., Anacortes, Wash.

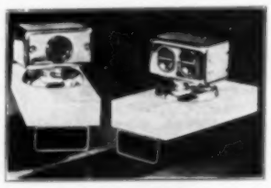
Adhesives are set by heat, pressure

Long Length designates new plywood panels which the company has in production in five thicknesses between ¼ and ¾ in., widths of 4 and 5 ft. and lengths of 12, 14 and 16 feet. Longer lengths can be specified for special manufacture. The plywood is made with waterproof adhesives. The innerply construction includes a solid core veneer. Appearance quality of face and back veneer is subject to specification.

BREVITY—Identify by IEN - 1683 if you write the maker

CONNECTOR . . Service fittings for underfloor wiring, chrome plated

Source: NATIONAL ELECTRIC PRODUCTS CORP.
13th Fl. Chamber of Commerce Bldg., Pittsburgh 19, Pa.



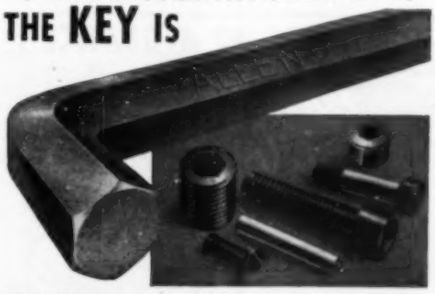
No. 7903-H, to the right in the illustration, is a new service fitting mounting standard duplex T-slot receptacles for high-potential light, power and office-appliance wiring. No. 7904-HL, to the left, mounts a single ¾-in. composition bushing for telephone, buzzer, communication wiring.

Both fittings are equipped with 1-in. nipples, bondnut locks and adapters to thread into standard 1½-in. outlets from an underfloor wiring duct. Height above the floor is 3 inches. Finish is in chromium plating.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1684 if you write the maker

THE KEY IS



HALF THE FASTENING TEAM

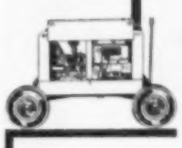
Where's the point in perfectly accurate screws and pipe plugs like Allens if you use a wobbly offsize key that bends, strips or gives way? A genuine Allen Hex Key in a genuine Allen ⬡ Socket is the perfect combination. Genuine Allen Keys of Allenoy Steel have the name stamped right on the side, and are available singly or in handy kits at leading distributors everywhere.

WARNING
Allen-Type screws aren't necessarily Allen-Made. Get genuine "Pressur-Formd" Allen ⬡ Head screws in the black and silver box.

ALLEN ALLEN HEAD
MANUFACTURING COMPANY
Hartford 2, Connecticut, U. S. A.

BREVITY—Identify by IEN - 1685 if you write the maker

NEW



LIGHTWEIGHT HEAVY DUTY ENGINE DRIVEN WELDERS

M & T engine-driven welders incorporate the first basic design change in arc welders in twenty years. Their high operating speeds provide extreme lightness and portability—the 300 amp. Chrysler-driven set weighs only 1720 lbs. Yet, these modern welders are amply rugged to stand up under the toughest working conditions.

200 amp air-cooled models in 30 and 40 volt ratings and heavy duty water-cooled sets in 200, 300 and 400 amp capacities are available. In addition, the M & T line includes a complete range of motor-generator units and AC transformers.

Write today for descriptive literature.

METAL & THERMIT CORP.
100 EAST 42ND STREET, NEW YORK 17, N. Y.

NEWARK PHILADELPHIA PITTSBURGH CLEVELAND
E. CHICAGO, IND. MINNEAPOLIS SO. SAN FRANCISCO

BREVITY—Identify by IEN - 1686 if you write the maker

Kester Solder

Kester's famous group of flux-core solders consist of over 100,000 different types and sizes.

Uniform · Efficient

Kester flux-core solders are made only from newly mined grade A tin and virgin lead.

KESTER SOLDER COMPANY
4201 Wrightwood Ave., Chicago 39
Newark, New Jersey
Brantford, Canada

Send for free manual: "SOLDER and Soldering Technique"

KESTER SOLDER

Standard for Industry since 1899

BREVITY—Identify by IEN - 1687 if you write the maker

INCREASE LIFTING CAPACITIES WITH KOEHRING TRUCK CRANES

On scattered lifting jobs requiring frequent moves, you'll find it pays to use Koehring rubber-tired Truck Cranes. 304 safely lifts up to 50,000 lbs. . . . 11.1 tons more than its crawler rating. Smaller 205 Truck Crane, (illustrated) with its 20,000 lb. lift on rubber, increases load capacities almost one-half.

ALSO CHECK EXTRA BOOM REACH, EXTRA TRAVEL SPEED AND MOBILITY

K927

Mail today to: KOEHRING CO., Dept. IEN, Milwaukee 10, Wis.
Please send bulletins on: ☐ 304 Truck Crane ☐ 205 Truck Crane
NAME ..... TITLE .....
COMPANY .....
ADDRESS .....
CITY ..... STATE .....
Type of plant or work .....

KOEHRING TRUCK CRANES

BREVITY—Identify by IEN - 1688 If you write the maker

The ONLY plastic shelf support with the heart of steel

This steel insert, molded into plastic Spring-Locks, gives strength where it's needed—at the point of load or impact—eliminates doubts concerning the strength of plastic at these critical points.

The design flexibility of plastic Spring-Locks makes them ideal for a variety of uses... shelf supports, washer cover knobs, drawer pulls and many others. Spring-Locks cut material and assembly costs, too. No special tools, bolts, nuts or threadings required. Just a half-turn locks them securely.

Many standard shapes and sizes of Simmons Spring-Locks are available or any shape head can be designed. Send for full details.

SIMMONS FASTENER CORPORATION
1758 North Broadway, Albany 1, N. Y.

Any shape head can be molded in metal or plastic.

HERE'S HOW SPRING-LOCKS WORK

1. *Insert* 2. *Twist*
Steel insert carries load.

Simmons Spring-Lock ★ QUICK-LOCK ★ ROTO-LOCK

BREVITY—Identify by IEN - 1689 If you write the maker

Drive out
FOUL AIR
Blow in
FRESH AIR
with Coppus Type A Ventilator

Assure greater safety, comfort for workers... get greater efficiency.

Drive out dangerous fumes, gases, stagnant or hot air from boilers, cable manholes, tanks, vats and other confined places. *Supply fresh air continuously.*

Send now for further information. Coppus Engineering Corporation, 142 Park Avenue, Worcester 2, Mass.

MANHOLES made safe for workers' entrance within minutes.

BOILER AND TANK INTERIORS cooled by Coppus. Fresh air supplied continuously.

ANOTHER **COPPUS** "BLUE RIBBON" PRODUCT

BREVITY—Identify by IEN - 1690 If you write the maker

New METHOD REJUVENATES OLD ASPHALT TILE

Multi-Clean Asphalt Tile Preserver restores appearance and serviceability. Dingy, "beat-up-looking" asphalt tile quickly responds to this treatment. Multi-Clean Asphalt Tile Preserver restores color and beauty to the surface, reduces porosity and fills in minute scratches which detract from the tile's appearance and which make maintenance difficult.

MULTI-CLEAN *Method* FOR EVERY FLOOR

There is a Multi-Clean Method for every type of floor. The procedure is determined by the specific requirements of each type. This specialized floor care saves time and labor, assures longer wear, and reduces the need for repairs and replacements.

FREE—MULTI-CLEAN FLOOR MAINTENANCE MANUAL

Whatever your type of floor, there's a Multi-Clean maintenance manual that explains how to simplify floor care. Write today—address Multi-Clean Products, Inc., Dept 31 D St. Paul 1, Minn.

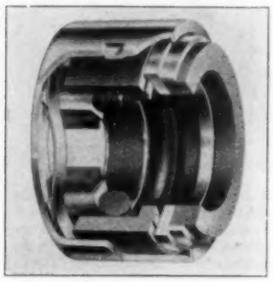
MULTI-CLEAN PRODUCTS, INC.

Custom Cleaning Chemicals
Floor and Rug Machines • Permanent Floor Finishes • Industrial Vacuums

BREVITY—Identify by IEN - 1691 If you write the maker

SEALING . . Self-contained assembly prevents axial leakage along a shaft

Source: SEALOL CORPORATION
54 Willard Ave., Providence 5, R. I.



Metal cup which rotates with a shaft encloses a shaft-hugging rubber friction ring in a metal retainer and O-ring for sealing action, a metal ring carrying a lapped bearing face and connection so it rotates with the outer cup and a second metal ring also with a bearing face and a second rubber friction ring that bears against a stationary machine surface to prevent this ring from rotating.

All are assembled in self-contained arrangement in this new rotating-shaft seal. The two friction rings respectively impel and resist rotation of the elements carrying the mating lapped faces to effect the sealing action. Two designs, Types FCB and GCB, differ only in the design of the stationary friction ring for sealing against pressure from front or rear.

A range of sizes is available in 1/8-in. steps between 3/8 and 1 5/8 in. at the shaft and approximately 1 to 2 5/8 in. in outside diameter, the outside dimension being non-critical. Length is 7/8 to about 1 1/8 inches. The seal is available in suitable materials for use with water, oil, kerosene, gasoline.

BREVITY—Identify by IEN - 1692 If you write the maker

PUMP . . Motor driven centrifugal operates submerged at bottom of a well

Source: SUMO PUMPS INC.
3 Atlantic St., Stamford, Conn.

Four types with capacities ranging overall from 5 to 1,250 gpm. and with maximum head at 800 ft. are included in a line of multi-stage motor-driven centrifugal pumps manufactured in England. The pump is now available with parts and service setup through the company on a national basis in the United States.

Pump and motor, the latter ranging from 1/2 to 60 hp. over the line, are assembled together with a central riser to which the delivery pipe is connected. The pump is lowered into a well casing for suspension at required depth by the pipe. A submarine cable leads upward from the motor between pipe and casing to a power source.

Smallest unit in the line, with rating from 5 to 60 gpm. and maximum head at 500 ft., applies in a 6-in. casing, measures 5 7/16 in. in outside diameter. Construction materials are bronze and stainless steel. Water lubricates the motor. Windings and cable connections are sealed in an alloy tube.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1693 If you write the maker

READINGS AT A GLANCE

for *BOTH* *AC* and *DC*

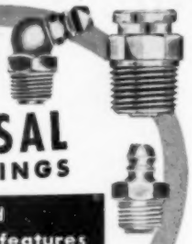
Instant Current Measurements Without Breaking Circuit or Insulation . . .

You can read 'em fast and accurately with the Columbia Tong Test Ammeter by merely clamping the tongs around the electrical conductor. Tong Test is the only instrument of its type that can measure both AC and DC. Cannot burn out for it has no windings. Safe, convenient and light in weight. Interchangeable scale ranges up to 1000 amperes. Five types to accommodate cables up to 3 7/8", bus bars up to 4 1/2" x 1/2". Voltage readings, too, with the Voltor Attachment.

Write for Tong Test Bulletin IQ-400

COLUMBIA — COLUMBIA ELECTRIC MFG. CO.
4519 Hamilton Ave., Cleveland 14, Ohio

BREVITY—Identify by IEN - 1694 If you write the maker



EXCLUSIVE only **UNIVERSAL GREASE FITTINGS** have these patented "easy-on easy-off" features

The Patented Release Shoulder and Release Groove assure an easy one-way angle release and eliminate the necessity of any twisting motion at low or high pressures. Universal Hydraulic Grease Fittings give positive sealing at high or low pressures and resist breaking, distortion and twist outs.

UNIVERSAL Couplers

Will stand 20,000 lbs. working pressures. Strongly and sturdily built . . . easy release action under all pressures. A model is available for every need. Write for your copy of the new 1951 UNIVERSAL Industrial Catalog illustrating and describing our complete line of hydraulic grease fittings and couplers for maintenance or for original equipment.

UNIVERSAL LUBRICATING SYSTEMS, INC.
785 Allegheny Avenue • Oakmont, Pa.

BREVITY—Identify by IEN - 1695 If you write the maker

COMPARE THE RESULTS you can get from these FREE samples of amazing DRIPRINT paper!

Write on your company letterhead for stock samples, sent without obligation.

DIETZGEN DRIPRINT TRADE MARK

Better, ready-to-use direct positive prints are yours in seconds with DRIPRINT

Whether you want prints with black, blue, red or sepia lines, you'll get better results with DRIPRINT. Made directly from your translucent original without a negative, these superior Dietzgen ammonia-process prints on paper or cloth give you denser, sharper lines on pure white backgrounds every time.

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Free Samples!

BREVITY—Identify by IEN - 1697 If you write the maker

Try this industrial finish that resists ACIDS, ALKALI, ABRASION, HEAT, THERMAL SHOCK!

A TYPICAL APPLICATION

Special Offer

If finish on your product or components involves any or all of the factors listed above, ERIE may have a porcelain enamel finish that exactly fits your needs. Noted for its durability, porcelain enamel can be formulated to provide specific service characteristics. Tell us your problem, today.

Write

Erie INDUSTRIAL TYPE PORCELAIN ENAMEL

THE *Erie* ENAMELING COMPANY
INDUSTRIAL DIVISION, ERIE, PENNSYLVANIA

BREVITY—Identify by IEN - 1698 If you write the maker

Prepared for Special Work

NATURALLY every U.S. Rubber V-Belt has special properties, depending on its ultimate purpose.

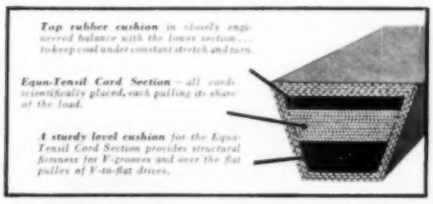
But if a belt has to handle conditions not usually found on the average drive, then it has to be "prepared" for that job. If an oil condition is involved, the belt may be made with an oil-resistant cover, or, if the condition is extreme, the entire belt may be made of oil-proof construction.

Where generation of static electricity occurs, the V-belt is so compounded that it becomes a conductor of electricity.

Only U.S. Rubber gives you *all* of these 4 V-Belt advantages;

1. *Major part of inherent stretch worked out by mechanical means, yet enough elasticity is retained to allow belt to withstand severe shock loads.*
2. *Cords treated with latex, to reduce heat generated by constant flexing, and to get maximum adhesion between the component parts of the belt.*
3. *Protective jacket that increases grip while keeping out dirt and prolonging wear.*
4. *Unique Equa-Tensil Cord Section—exclusive with U.S. Rubber—which provides efficient pull and strength under diverse operations.*

For more information write to address below.



MULTIPLE V-BELTS · F. H. P. BELTS · FAN BELTS
FARM IMPLEMENT BELTS · SPECIAL PURPOSE BELTS

PRODUCTS OF

U.S. RUBBER
SERVING THROUGH SCIENCE

UNITED STATES RUBBER COMPANY
Mechanical Goods Division • Rockefeller Center, New York 20, N. Y.

BREVITY—Identify by IEN - 1700 If you write the maker

PACKAGING . . Box making machine has automatic head feeding attachment

Source: FOOD MACHINERY & CHEMICAL CORP.
3073-77 12th St., Riverside, Calif.

New attachment for the company's Type AC-2 box-making machine feeds box heads from the two sides at the parts-assembly end of the machine. The operator feeds the sides and bottoms. The machine drives the nails. Adjustments can be made for any size of box to 27 by 16 in. in length and width and the machine will drive 18 nails per stroke, nine at each end. The attachment takes a maximum of 60 heads on each side. The box ejects through the rear of the machine except in the larger sizes which come back to the front. A friction clutch protects the operation.

BREVITY—Identify by IEN - 1701 If you write the maker

DUST COLLECTING . . Electrostatic equipment for dust removal, recovery

Source: BUELL ENGINEERING CO.
70 Pine St., 50th Floor, New York 5, N. Y.

Company invites survey inquiry

Fly ash and foundry dust collection, acid mist and oxide removal, soda ash and metallurgical fines recovery are typical applications for the company's new SF Precipitator on which it holds exclusive American manufacturing and sales rights. The equipment operates electrostatically to charge the dust or mist particles in an airstream, attract them to collection plates, continuously discharge them by plate rapping so they fall to collection hoppers.

Applications are primarily for large-scale operations. Each is engineered and built to meet given requirements.

BREVITY—Identify by IEN - 1702 If you write the maker

SEPARATING . . Extractor basket, stainless steel, 17 to 30 in. diameter

Source: HAMILTON COPPER & BRASS WORKS INC.
1765-69 Dixie Highway, Hamilton, Ohio

New line of stainless-steel baskets is in production for manufacturers of centrifugal equipment and for application as spare units in the field. Perforations are made after the basket is formed, each perforation being started on the inside to present a rounded edge free from burrs. Each assembly is bored, reamed and balanced statically and dynamically. Six sizes in the line range from 17 to 30 in. in diameter.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

BREVITY—Identify by IEN - 1703 If you write the maker

Specify dy/chek
dye penetrant metal inspection

Simplified Non-Destructive Testing...
Any Metal—Anywhere

FASTER, CHEAPER, MORE ACCURATE
Completely Portable, License-Free

Write for Details

dy/chek COMPANY

Division of Northrop Aircraft, Inc.

1529 EAST BROADWAY HAWTHORNE, CALIF.

BREVITY—Identify by IEN - 1704 If you write the maker

Rubber processor speeds up drying operations . . . reduces conveyor length

● Recently an Eastern rubber processor replaced his 300-foot conveyor with a Cyclone Flex-Grid Belt—only 70 feet in length! The wide open areas of the Cyclone Belt allow the infra-red rays in the drying oven to come into more complete contact with the product's surface for faster, more uniform drying.

Cyclone Conveyor Belts are available in three types—Flex-Grid, Flat Wire and Chain Link—one of them just right to make your plant operations more efficient, more economical. Just write for a copy of our catalog #4.

CYCLONE FENCE DIVISION
(American Steel & Wire Company)
DEPT. C-21, WAUKEGAN, ILLINOIS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

USS CYCLONE
METAL CONVEYOR BELTS
UNITED STATES STEEL

BREVITY—Identify by IEN - 1705 If you write the maker

The Counter That Gives You a *PRINTED RECORD* Every Time!
"PVR" PRODUCTIMETER

Visual Count and Printed Record of Your Plant Production

- provides certified record of pieces produced.
- eliminates illegible handwriting and error.
- decreases timekeeping and accounting time.
- prints multiple copies or single cards.

Durant Sales Engineers will be glad to demonstrate.

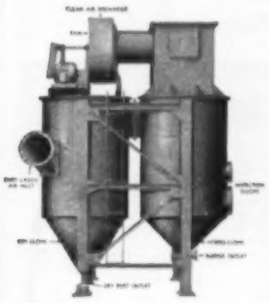
Send for Bulletin PVR

DURANT MANUFACTURING COMPANY
1930 N. Buttum Street, Milwaukee 1, Wisconsin
130 Orange Street, Providence 3, R. I.
Representatives in Principal Cities

PRODUCTIMETERS SINCE 1879 *Count Everything*

BREVITY—Identify by IEN - 1706 If you write the maker

Reclaim Valuable Dusts with the Wet-Dry Type Hydro-Clone



This is a twin unit that recovers coarser materials dry, and suppresses the fines with water, reducing them to sludge. It handles heavier loads than other filters, or separating devices, including high temperature dusts that would burn out cloth screen collectors.

The Whiting Hydro-Clone has no moving parts . . . no spray nozzles to clog . . . no cloth bags, or screens to replace. Available in capacities from 2,000 to 50,000 cfm. Write for Bulletin FY-117 for full information.

WHITING CORPORATION
15629 Lathrop Ave.
Harvey, Illinois

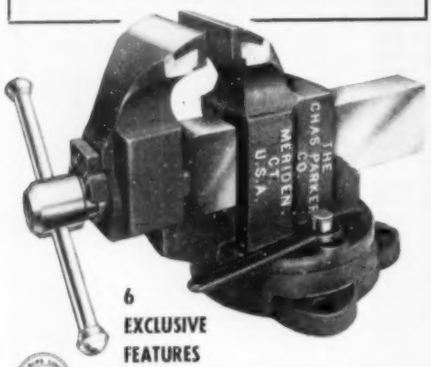
FREE
New booklet of Practical Information on Dust Collection. Ask for Bulletin FY-142

BREVITY—Identify by IEN - 1707 if you write the maker

PARKER VISES

Complete Line Including

HINGED PIPE VISES • WOODWORKERS' VISES



6 EXCLUSIVE FEATURES

Write for catalog
Sold 100% through distributors

THE CHARLES PARKER CO.
MERIDEN CONNECTICUT

BREVITY—Identify by IEN - 1708 if you write the maker

Clamp Most Anything WITH "Aero-Seal"

WORM-DRIVE CLAMPS

- Hold odd-shaped connections
- Hold multiple pipes or ducts
- Conforms to any shape
- No distortion—no crimping
- Vibration-proof . . . no parts to lose or loosen
- Use again and again
- Made in any length
- All stainless steel bands at no extra cost

ANOTHER BREEZE MARK PRODUCT

WRITE TODAY FOR FREE SAMPLE!

"Aero-Seal"® HOSE CLAMPS

AERO-SEAL Worm Drive Never Works Loose

BREEZE CORPORATIONS, INC.
32 South Sixth Street Newark, N. J.

BREVITY—Identify by IEN - 1709 if you write the maker

SET THIS METER FOR BATCH MEASUREMENT OF LIQUIDS

NIAGARA Electricontact METERS

Accurate . . . Automatic

Niagara Meters offer the simplest method of measuring commercial liquids quickly, accurately. Obsolete tanks and gauge sticks are replaced by Niagara volumetric meters. An electric contact unit provides automatic shut-off for batch measurements.

Engineered for a wide variety of industrial uses, Niagara Electricontact Meters are available in several models, including stainless steel for metering chemicals. It will pay you to investigate dependable Niagara Meters.

SEND COUPON FOR COMPLETE DETAILS

I would like complete information sent me on how Niagara Electricontact Meters increase processing accuracy for:

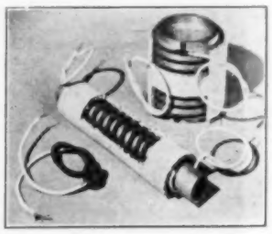
Liquid _____
Temp. _____ °F. Pressure _____ p.s.i.
Flow rate _____ g.p.m.
Maximum batch _____
Company _____
By _____
Address _____

BUFFALO METER CO.
2929 MAIN STREET BUFFALO, N. Y.

BREVITY—Identify by IEN - 1710 if you write the maker

HEATING . . Electric element, spring sheathed, for cylinders, pipes

Source: TITAN MFG. CO.
288-92 Terrace, Buffalo 2, N. Y.



Flexibility permitting application on curved surfaces on minimum radius to ½ in. characterizes new refractory insulated electric heating element. It is sheathed inside a $\frac{1}{16}$-in. spring-steel coil. Lengths are standard at 1 to 10 ft. in 1-ft. increments.

Operation can be maintained at temperatures to 1,000 deg. F. with connection on a 110 or 220-volt line as specified. Three types rate 5, 10 and 15 watts for temperatures of 475, 650 and 700 deg. F. in free air. The element is particularly suited to maintain free flow of liquids in pipe lines, through valves and fittings and to keep viscous materials fluid in containers.

BREVITY—Identify by IEN - 1711 if you write the maker

CLEANING . . White powdered material mixes with water, for glass and metals

Source: ALCONOX INC.
59-65 Cornelison Ave., Jersey City 4, N. J.

Packaged in 3 lb. boxes to 300 lb. barrels

New **detergent** carrying the company's name Alconox has been developed for solution in water and application in cleaning glassware, metal utensils, plastic surfaces, porcelain. It is used in the proportion of one or two tablespoons to a gallon of warm water. Application is by brush or cloth followed by rinsing in hot or cold water. The solution contains no soap but does make a lather in hard or soft water. It is non-irritating to a worker's skin.

BREVITY—Identify by IEN - 1712 if you write the maker

EXTINGUISHING . . Dry chemical unit, wheel mounted with a nitrogen tank

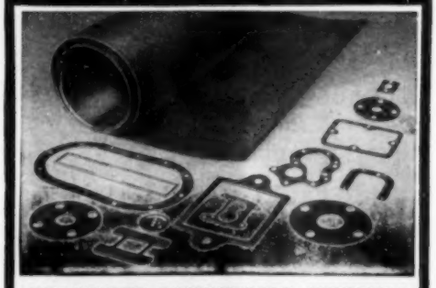
Source: WALTER KIDDE & CO.
673-77 Main St., Belleville 9, N. J.

Fires in flammable liquids and electrical equipment are the intended applications for this new 150-lb. dry-chemical wheel-mounted extinguisher. The chemical container is connected to a cylinder of nitrogen carried on the assembly so the chemical is expelled when the connecting valve is opened. A regulator holds constant pressure on the chemical to move it through a 50-ft. hose to a discharge nozzle that can be set for fan or straight pattern or closed.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1713 if you write the maker

MELRATH GASKETS



GRAPHITED COMPRESSED ASBESTOS SHEET PACKING and GASKETS

MELRATH No. 125 . . . a high quality long fiber material resistant to acids, oils, steam, chemicals, etc. Proven for over 30 years.

There's a Melrath Gasket for Every Purpose!

MELRATH SUPPLY & GASKET CO., INC.
3501 MEMPHIS ST., PHILADELPHIA 34, PA.

BREVITY—Identify by IEN - 1714 if you write the maker

SURE CURE FOR METAL SHORTAGES

Switch to **PLASTICS..** *The Quality Substitute for...*

NAMEPLATES

Here is a practical way to avoid delays in production due to metal shortages. Substitute plastics for items like nameplates which can be fabricated advantageously to your exact specifications.

Sillcocks-Miller specialists offer the experience and facilities to develop and produce quality nameplates and other parts for which plastics are a practical substitute material.

It will pay you to write for details or submit specifications for quotation.

The SILLCOCKS-MILLER Company

Pioneers in Plastic Fabrication since 1910
23 W. Parker Ave., Maplewood N. J.

BREVITY—Identify by IEN - 1715 if you write the maker

Townsend

Saves Customer $12,000 In One Year With This Cold Headed Part

There may be several parts you are now using that Townsend can produce for you by cold-heading at substantial savings just as we did for a mid-west washing machine manufacturer. Originally the wringer spring rod shown above was made on a bolt maker at $33.40 per thousand. Then a Townsend engineer suggested that this same item, with virtually no change in design could be made by upsetting the head and shoulder at a cost of only $20.95 per thousand — a clear savings of $12.45 per thousand. On an annual basis they save more than $12,000 on this part alone.

Savings like this are not unusual with Townsend customers — this is a typical example — some manufacturers save even more. Such economy is a reflection of the size and experience of the Townsend organization and demonstrates the possibilities for savings even on simple items.

Townsend makes 60 million items every working day by cold-heading and extruding — then they may be pointed, machined, drilled, slotted, trimmed, threaded, pierced, knurled, bent, or flattened. We make parts of carbon and stainless steels — in bronze, copper, aluminum — in a variety of platings and finishes. If you want to learn more about the economy of cold-heading by Townsend ask to have one of our engineers call.

Townsend
COMPANY • ESTABLISHED 1816

Plants—New Brighton, Pa. Chicago 38, Ill.
Division Sales Offices—Philadelphia, Detroit, Chicago
Sales Offices in Principal Cities

▼ BREVITY—Identify by IEN - 1717 if you write the maker ▼

Titan

Brass and Bronze Products

"Quality Alloys since 1915"

- Brass and Bronze Free Cutting Rods
- Brass and Bronze Forging Rods
- Bronze Welding Rods
- Extruded Brass Shapes
- Brass and Bronze Forgings
- Brass Pressure Die Castings

Titan Brass and Bronze Products are supplied in analyses to meet every requirement. Write for literature.

Titan Metal Manufacturing Co.
Bellefonte, Pennsylvania
Offices and Agencies in Principal Cities

▼ BREVITY—Identify by IEN - 1720 if you write the maker ▼

MOTOR CONTROL . . Starting equipment meets automotive makers' standards

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.

New line of reversing and non-reversing motor-starting equipment has been developed by the company in accordance with the Joint Industry Conference Electrical Standards for industrial equipment. Assembly is in Type-12 steel enclosures fitted with a drip channel across the top and with neoprene gasketed door.

Assembly includes a fused or unfused disconnect switch at the top, a dual-voltage control transformer with a terminal board and built-in circuit breaker and pushbutton reset, and a 3-pole magnetic contactor with overload relays. Two contactors are employed in the reversing design. Each is fitted with an operating coil in a plastic enclosure to protect mechanically and exclude dust and moisture.

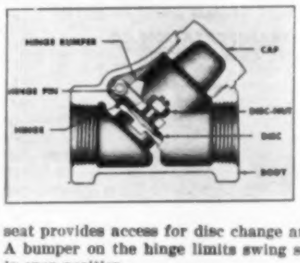
Visible indication is provided that the disconnect switch is in "off" position when the door is opened. A maximum of four auxiliary interlocks can be assembled for interconnecting circuits. They can be changed between normally open and normally closed without adding any parts.

The circuits are color coded. Ratings are 1½, 3 and 7½ hp. on 110-volt ac., 2, 5 and 15 hp. on 220 volts, 2, 7½ and 25 hp. on 440 volts. The smallest, in non-reversing assembly with a disconnect switch, measures about 10½ by 8 by 27 inches.

▼ BREVITY—Identify by IEN - 1721 if you write the maker ▼

VALVE . . Swing check design, ¼ to 3 in., 200 and 300 lb. service

Source: CRANE CO.
834-38 S. Michigan Ave., Chicago 5, Ill.



The hinged disc in this new check valve seats at 45 deg., closes by its own weight when flow stops. The Y-pattern body presents a smooth interior to minimize flow resistance. A cap in the body in line with the seat provides access for disc change and for seat regrinding. A bumper on the hinge limits swing so the disc cannot jam in open position.

Construction includes an alloy-brass body, bronze hinge pin with the cap, hinge, disc, disc nut and hinge-pin plug made of brass. The threaded design for 200-lb. service measures 2⅛ to 8⅛ in. between faces in the ¼ to 3-in. sizes. The flanged valve for 300-lb. service measures 6¼ to 11⅝ in. in 1 to 3-in. sizes.

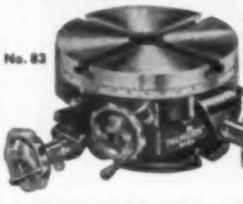
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 1723 if you write the maker ▼

DUAL CROSS and ROTARY FEED

PALMGREN

Rotary, Index, Milling Table



Now Only $49.50

Turns Your DRILL PRESS Into A VERTICAL MILLER

Think what this will mean in your shop! Can be used on any Drill Press, Lathe or Milling Machine and provides what is practically a universal milling machine.

Designed for use in all types of metal and woodworking shops. A precision table permitting fine work to close tolerances. It is accurate, speedy, well constructed and attaches quickly in a firm position.

Rotary feed calibrated in degrees; Cross feed in thousandths; Dual Cross Slide with cross feed 2⅛" each side of center or 4¼" overall. Has acme thread cross feed screws, adjustable gibs on cross slides. 40 to 1 worm and gear ratio in rotary feed. Equipped with bolt slots and locking screws.

No. 83 Table Dia. 8", T-Slots ⅜", Base Keyway ⅜", Base Dia. 6¼", Ht. 5", Wt. 37 lbs. Price Only $49.50. Other Types available, No. 82 Dual Cross Feed only $39.75; No. 86 Rotary Feed Only $42.50.

Order Today! If dealer can't supply, write us. Ask for Circular No. 10

CHICAGO TOOL and ENGINEERING CO.
Mfrs. of PALMGREN PRODUCTS Since 1918
8406 South Chicago Ave. • Chicago 17, Ill.

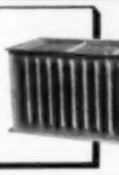
▼ BREVITY—Identify by IEN - 1718 if you write the maker ▼

SALT BATH BRAZING

the fastest, cheapest production method

Maximum Production in Minimum Floor Space!
180 steel bicycle forks per hour copper brazed in an Ajax Salt Bath measuring only 4" x 36" x 24"! Quenched directly from brazing bath into water.

58 Aluminum Joints Brazed Simultaneously!
Aircraft cabin heater with 58 separate aluminum parts brazed in 10 min. Eliminated hand torch brazing requiring 7 hrs. per unit. Thin aluminum sheets are brazed to structural parts 10 times heavier without warping.



Brazing Cost: Nothing
Steel starter pedal brass brazed and carburized simultaneously in the same Ajax furnace with one heating. Former method required two furnaces, one for brazing, another for carburizing.

Rejects Reduced: 70% to Zero!
Brass electronic wave guide with stainless-steel flange brazed with silver solder in Ajax Salt Bath at 1350°F. in 1½ minutes, then air cooled. Rejects reduced to 0 whereas with previous methods, rejects ran as high as 70%.

Work immersed in batches . . . 5, 20 or 100 assemblies in each batch.

All joints brazed simultaneously . . . in seconds rather than in minutes.

Decarburization of steel assemblies avoided . . . no reheating needed. Clean surfaces assured for subsequent processing.

No cooling chamber required . . . no hydrogen atmosphere. 75% less floor space!

Brazing AND hardening . . . can be done simultaneously in a single operation.

First cost of equipment lower . . . than any other production brazing system.

Let us braze a job batch of your parts in our Metallurgical Service Laboratory. See how much faster your work can be handled, how much your product can be improved. Write for details.

AJAX ELECTRIC COMPANY, INC.
The world's largest manufacturer of electric heat treating furnaces exclusively

900 Frankford Avenue
Philadelphia 23, Penna.

AJAX HULTGREN

ELECTRIC SALT BATH FURNACES

▼ BREVITY—Identify by IEN - 1722 if you write the maker ▼

HI-HEAT

BLUE 'M' LINE

MODEL AHH-19 GRAVITY CONVECTION OVEN

ALL ELECTRIC * ALL STAINLESS STEEL * FULLY AUTOMATIC TEMPERATURE RANGE FROM 100° F TO 800° F

Equipped with 3 heat switch for low, intermediate, and high temperatures. Double walled housing and door of polished stainless steel inside and out. All six sides have 5" of dual MODELLA insulation. Unconditionally guaranteed double-bank Modella heating element insures positive temperature uniformity. Two stainless steel shelves that are adjustable and removable.

Model AAH-19: Inside dimensions: 19" W x 15" H x 18" D
Current consumption: 18 amps on 230V.
Voltage: 230/1 ph./60 cycle A.C.

$690.00

Also available in 800 F series:

Model AHH-12	12" x 12" x 12" I.D.	$495.00
AHH-16	16" x 16" x 14" I.D.	590.00
AHH-24	24" x 24" x 20" I.D.	810.00

* Other models for 1000° F and 1200° F operation

CONTACT YOUR LOCAL DEALER or

BLUE M ELECTRIC CO.
306-B W. 69th ST. CHICAGO 21, ILL.

▼ BREVITY—Identify by IEN - 1724 if you write the maker ▼

Gear Unit Made Better . . . but Cheaper with AMGEARS know-how

Wanted . . . constant mesh 3-speed divider and multiplier transmission for 28 hp.

Supplied: Exceptionally compact unit with 2000 rpm. input, 3150 rpm. overdrive and 1060 rpm. underdrive output. Yet, no bronze bearings needed on A and B!

Production and precision spurs, sprockets, helicals, worms and wormgears; straight and spiral bevel gears and racks.

WHY? Amgears designed the output shaft and gears A and B to rotate in same direction. Result, a relatively small difference in velocity between shaft and gear bores, with no load when velocity differences occur.

Save on *your* gear costs . . . improve your products . . . with AMGEARS design help as well as unparalleled gear manufacturing facilities. Write for interesting CASE HISTORIES.

AMGEARS, INC.
6633 WEST 65th STREET
CHICAGO 38, ILLINOIS
A SUBSIDIARY OF HUPP CORPORATION
CONTRACT MANUFACTURERS
Detroit • Cleveland • Chicago

▼ BREVITY—Identify by IEN - 1725 if you write the maker ▼

TALK BUSINESS in 2 seconds!

WITH ELECTRONIC **AMPLICALL**

THE BETTER BUSINESS INTERCOM SYSTEM

SEE YOUR CLASSIFIED PHONE BOOK under "Intercommunication" for your local AMPLICALL specialist, or write us direct

Talk business in seconds—save time and cut costs now with fast-action AMPLICALL. Simple 2-second speech contact between all departments speeds routine—measurably boosts office and plant efficiency. AMPLICALL keeps personnel on the job every working minute—*gets more work done for every operations dollar spent*—pays for itself quickly! Get the full details on AMPLICALL today!

Electroneering is our business

SOUND EQUIPMENT — **Rauland** — INTER-COMMUNICATION

RAULAND-BORG CORPORATION • 3523-K ADDISON ST., CHICAGO 18, ILL.

BREVITY—Identify by IEN - 1726 if you write the maker

JOMAC GLOVES

save 90c per man per workday in handling sheet metal

A large manufacturer of kitchen appliances* tested all types of gloves for handling sheet metal. Jomac proved superior to any other glove tried. The company standardized on Jomac. Cost records show Jomac is now saving the company 90c per man per workday.

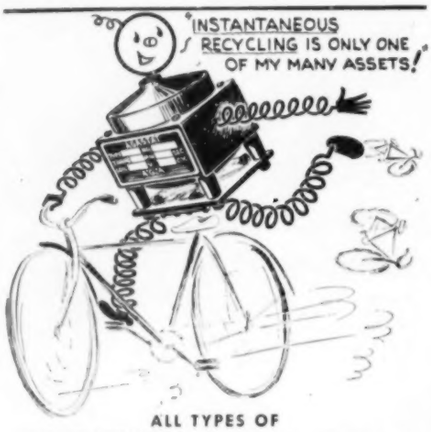
*Name on request

JOMACS ARE
Washable . . Reversible . . Flexible . . Heat-resistant
Protect against heat, cold, rough and sharp edges

C. WALKER JONES CO.

6135 N. Lambert Street, Philadelphia 38, Pa.

BREVITY—Identify by IEN - 1727 if you write the maker



ALL TYPES OF

AGASTAT TIME DELAY RELAYS

are solenoid actuated — pneumatically timed. For AC and DC service. It will pay you to take time out to investigate Agastat Time Delay Relays. Information and literature on request.

AGA AIRPORT LIGHTING · AGA SUPSONIC REFLECTORS · AGA MARINE LIGHTING EQUIPMENT · AGA AGASTAT TIME DELAY RELAYS

AMERICAN GAS ACCUMULATOR COMPANY
1027 NEWARK AVENUE • ELIZABETH 3, N. J.

BREVITY—Identify by IEN - 1728 if you write the maker

HERE'S YOUR *Complete* STEAM PLANT

A complete steam plant backed by undivided responsibility • Shipped completely assembled • More than 80% thermal efficiency guaranteed • 4-pass design provides 5 sq. ft. of heating surface per b.h.p. • Built-in induced draft eliminates need of expensive chimney • Simple installation • Clean, quiet operation • Heavy-duty construction assures long-lived dependability • 17 sizes from 20 to 500 b.h.p. for pressures up to 250 p.s.i. or for hot water heating.

For complete details write for catalog 217.

Superior STEAM GENERATORS

SUPERIOR COMBUSTION INDUSTRIES, Inc.
Factory: Emmaus, Pa.
Executive Offices: Times Building, Times Square, New York 18, N. Y.

BREVITY—Identify by IEN - 1729 if you write the maker

MOTOR . . Wound rotor induction, 30 to 1,500 hp., for heavy duty uses

Source: ELECTRIC MACHINERY MFG. CO.
1335 Tyler St., Minneapolis 13, Minn.

Variable speed, high starting torque, low starting current, long acceleration interval are characteristics of this new wound-rotor induction motor. It is supplied in drip-proof construction as standard, can be specified splash-proof, enclosed, forced ventilation. Assembly is with ball or sleeve bearings, the latter superfinished to minimize friction.

BREVITY—Identify by IEN - 1730 if you write the maker

PRESS TOOLS . . Lubricator cup applies on guide pins in a die set

Source: TRICO MFG. CO.
P. O. Box 1431, Stamford, Conn.

Rubber compound, oil resistant, is employed in manufacture of a new lubricant cup for application on the guide pins in a die set. The guide bushings in the punch portion of the set dip into the cups and spread lubricant on the pins on the upstroke of the press. Standard lubricating oil can be used. The company recommends the extreme-pressure lubricant known as Molykote and will send data concerning it.

The cups are eccentric on their center hole for position adjustment. Sizes start at ½ in. measured on the center hole and at a list price of $2. per pair.

BREVITY—Identify by IEN - 1731 if you write the maker

TRACTOR . . Battery powered unit weighs 6 ton, rates 5 ton at drawbar

Source: AUTOMATIC TRANSPORTATION CO.
109 W. 87th St., Chicago 20, Ill.

Special tractor has been built, initially for government use, with capacity to exert a 5-ton drawbar pull, to travel in either direction at a speed of 21 mph. free. The machine measures 120 by 64 in. in length and width. Outside turning radius is 128 inches. It is shown while moving two diesel locomotives in a yard test.

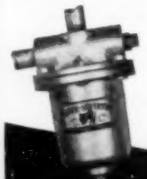
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 1732 if you write the maker

WHAT EVERY ENGINEER SHOULD KNOW ABOUT STEAM TRAP ECONOMY

THIS **FREE** BOOK GIVES COMPLETE INFORMATION

● Every engineer should know there is a lot of difference in steam traps from the standpoint of true economy. A trap may be priced right and have a large capacity . . . but still be costly to install and remove for service, making it expensive in the long run. We urge every steam trap buyer to learn the truth about steam trap economy. Send for a copy of Solving Steam Trap Problems. It explains the economics of steam trapping in complete detail. Write for a free copy now.



THE V. D. ANDERSON CO.
1931 W. 96th St. • Cleveland 2, Ohio

SUPER-SILVERTOP STEAM TRAPS

BREVITY—Identify by IEN - 1733 if you write the maker

New Folder for the ASKING

You should have this folder if you are concerned with handling quantities of flowable bulk materials. It tells you about the Super-Concrete Staves of which Neff & Fry Storage Bins are constructed; how the reinforcement is pre-stressed; how the bins are engineered to specific requirements.

The folder contains data on bin capacities. It lists the 86 kinds of materials now being handled in Neff & Fry silos. It gives you the names of prominent users. It contains eight photos of typical installations.

Spend five minutes reading the folder and you'll be a lot better informed on above-ground materials handling. Mail your request for a copy now while the subject is on your mind.

THE NEFF & FRY CO.
114 ELM STREET • CAMDEN, OHIO

BREVITY—Identify by IEN - 1734 if you write the maker

looking for processing equipment?

The Air Preheater Corporation
American Pulverizer Company
The Babcock & Wilcox Company
Black, Sivalls & Bryson, Inc.
Buffalo Tank Corporation
Chemsteel Construction Company, Inc.
The Colonial Iron Works Co.
The Dow Chemical Company
The Eimco Corporation
Farrar & Trefts, Inc.
General American Transportation Corporation
B. F. Gump Co.
Maurice A. Knight
Nooter Corporation
The Patterson-Kelley Co., Inc.
Pittsburgh Lectrodryer Corp.
Stebbins Engineering and Manufacturing Company
Union Carbide & Carbon Corporation
Western Supply Company
The Whitlock Manufacturing Company

reach for Sweet's . . . All these manufacturers' catalogs — containing comprehensive information on crushing, grinding, mechanical separation, drying, forming, heat transfer, fabricated plate and non-metallic processing equipment and accessories —are instantly available in Section No. 1 of your Sweet's File for the Process Industries.

The other sections of this File contain additional catalogs covering a wide range of materials and equipment . . . useful and up-to-date information on product forms, characteristics, performance and use.

This grouping of manufacturers' catalogs, in sections according to products or use of products, is made for your convenience so that you can more readily compare one product with another. Indexes of manufacturers, products and trade names lead you quickly to the catalogs you are looking for.

Sweet's is working constantly to get more manufacturers to send you their catalogs in this easy-to-use form. If you fail to find what you want, please tell us.

Sweet's catalog service
DIVISION OF F. W. DODGE CORPORATION
119 West 40th Street New York 18, N. Y.

BREVITY—Identify by IEN - 1736 if you write the maker

EDWARD E. ROBINSON

METERING PUMP for HOT WAXES and CEMENTS

- Filling
- Sealing
- Potting
- Insulating
- Cementing
- Impregnating
- Weather Proofing

Transformers, Condensers, Rectifiers, Sockets, Switches, Wiring Devices

Robinson Metering Pump being used to forcibly eject metered amounts of cement into wire brush handle. Reservoir temperature 350° F.

Not a gravity dispenser — Forcibly ejects hot waxes and cements.
Thermostatically controlled heat — Variable with a maximum reservoir temperature of 450° F.
Motor driven, clutch actuated — 2/3 second per ejection.
Variable discharge — Ejections changed in 2 seconds, without tools.
Reduces unit costs—No skilled operator required. Saves material — reduces rejects.
Easily installed — Adaptable to any production set-up.

For complete information on this modern production tool and its possible application to your requirements, write for Bulletin IEN 2-51.

EDWARD E. ROBINSON INCORPORATED
95 PARK AVENUE • NUTLEY 10, N. J.

BREVITY—Identify by IEN - 1737 if you write the maker

HAVE YOU AN ORDNANCE PROCUREMENT PROBLEM . . .

HAYS IS A DEPENDABLE SOURCE OF SUPPLY FOR MACHINED BRASS AND BRONZE CASTINGS

One of the nation's largest producers of machined brass and bronze castings . . . FACILITIES that include pattern department, brass foundries, precision machines capable of producing large quantity requirements . . . PERSONNEL of design, tool and production engineers and expert craftsmen with many years of service . . . REPUTATION for QUALITY that results from 80 years' experience in supplying the water and gas utilities, manufacturers in the appliance, industrial, and marine fields, and from producing material for the ARMY, NAVY, and AIR FORCE.

Submit your requirements with details, specifications, and delivery for prompt quotation.

HAVE YOU A WATER CONTROL PROBLEM . . .

The "MESURFLO" Control maintains even flow regardless of variable pressure

Automatically regulates flow at a predetermined rate—unaffected by variations in pressure . . . Subdues excessive pressure hammer and vibration . . . Installed like an ordinary union coupling . . . Permits use of simple timing mechanisms . . . Conserves water . . . Sturdy and simple in design . . . Accomplishments not duplicated at any cost.

ONE OF MORE THAN 3500 CATALOGED PRODUCTS MANUFACTURED BY HAYS

HAYS

HAYS MANUFACTURING COMPANY
General Offices, Machining, Fabricating and Assembly Plant
809 12th Street, ERIE, PA.
Foundries: Erie, Pa., and Albion, Pa.

BREVITY—Identify by IEN - 1739 if you write the maker

CUTTING . . Powder scarfing torch for stainless steel slab conditioning

Source: LINDE AIR PRODUCTS CO.
30 E. 42nd St., Room 308, New York 17, N. Y.

Oxyweld FSP-2 is a new design in the company's line of steel-scarfing torches in which a finely-divided iron powder is fed externally into the cutting-oxygen stream as it issues from the torch nozzle. The powder heats to ignition temperature in the oxy-acetylene preheat flame. Then it burns in the oxygen stream to create the high temperature and slagging action required for scarfing stainless steel. The new torch makes a pass measuring 2 to 2¼ in. in width, consumes 25 lb. of powder for a 1½-ton slab.

BREVITY—Identify by IEN - 1740 if you write the maker

CLEANING . . Metal-canvas hood confines dust in blowing out a motor

Source: SPENCER TURBINE CO.
500 New Park St., Hartford 6, Conn.

User specifies motor sizes

Basing on previous designs, the company is prepared to supply to specification a combination sheet-metal and canvas hood to fit over electric motors that are to be blown out by compressed air. The hood rides over the motor, presents an inlet tube at one end and an outlet at the other.

An air hose or the nozzle of a portable blower is inserted in the inlet and the air is directed through the motor windings. The outlet is intended for connection to one of the company's vacuum cleaning machines to draw in the dust as it issues from the motor and prevent it from spreading in the surrounding air. The hood can be carried from one motor to another.

BREVITY—Identify by IEN - 1741 if you write the maker

LIGHTING . . Electric lantern with sealed beam lamp, 6 volt battery

Source: WESTINGHOUSE ELECTRIC CORP.
2-4 McArthur Ave., Bloomfield, N. J.

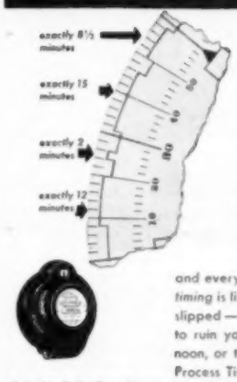
List price is $7.25 for this new aluminum-housing lantern with its sealed-beam lamp and 6-volt dry battery. Weight is 44 ounces. The all-glass lamp is the same design as those employed in motor-vehicle head lamps. It has a clear lens for spot lighting. A larger housing to take a spare battery for the lamp lists at about $11.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 1742 if you write the maker

NO MORE GUESSWORK!

PROCESS TIMING automatically recorded by a Little "TIME CLOCK"



"The cure must be 8½ minutes"—"the heat must be applied exactly 15 minutes"—"the plating must take just 2 minutes"—"the pigment must be mixed just 12 minutes"—etc.

The *Servis Recorder* checks on this—it records just what happened—it "*times the process.*" You are no longer in the dark; from now on you know all day and every day whether your process timing is lived up to—or if somebody slipped—if something went wrong to ruin your product for that afternoon, or that whole shift! Write for Process Timing Catalog. The Service Recorder Co., 1375 Euclid Avenue, Cleveland 15, Ohio.

Bolt this 2 lb. Recorder right to the machine itself. Let the "Process" record itself on the chart —(No ink, no pencil, no wires; the record is recorded in wax).

The Servis Recorder
The Time Clock for Machinery

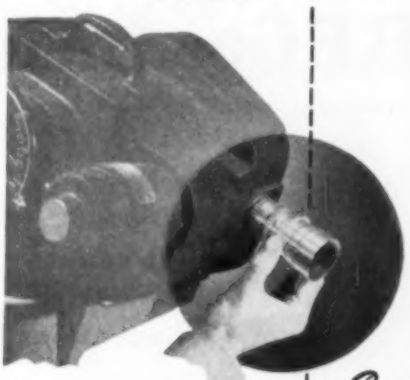
BREVITY—Identify by IEN - 1743 if you write the maker

IN WIRE-MESH PRODUCTS LET JELLIFF DO IT!

For 70 years we've been weaving Wire Mesh. And a good part of that time we have also been making things of Wire Mesh for people who find it is cheaper, easier and generally more satisfactory to "let Jelliff do it."
From big Dipping Baskets to tiny precision filters — from fuel strainers to what-is-it gadgets — JELLIFF's Custom Production Department turns out fabricated Wire-Mesh products at speed, price and precision that mean lower costs and a stronger competitive position for our many customers.
If you buy or make wire-mesh assemblies as components of your own products and have not yet had an estimate from Jelliff, write today for details. No obligation, even if you enclose a blueprint for us to figure on. Address Department 12.

THE C. O. JELLIFF MFG. CORP.
DIPPING BASKETS · LEKTROMESH · RESISTANCE WIRE · WIRE MESH PARTS · WIRE CLOTH · STRAINERS • FILTERS
SOUTHPORT CONNECTICUT

BREVITY—Identify by IEN - 1744 if you write the maker



A FASTER *Finer Eye* to study action too fast for your own eyes

The new Kodak Cine Ektar Lens, 63mm. *f*/2.0, now available on the Kodak High Speed Camera, requires less light to record superb pictures at rates of 1000 to 3000 per second. That's a factor of utmost importance in hard-to-light locations.

With nearly twice the light-gathering capacity previously available, the astounding over-all image quality of this new lens supplements the "slowing down" of time that results during projection at the standard 16 frames per second. Result: revelation for leisurely study of unsuspected vital details about products and processes that move too fast for your eye to follow.

The booklet "Magnifying Time" tells the complete story of seeing the unseeable. Send for it today. Eastman Kodak Company, Industrial Photographic Division, Rochester 4, N. Y.

the Kodak *High Speed* Camera

Kodak

BREVITY—Identify by IEN - 1746 if you write the maker

PROVIDES

Valve Combinations FOR 90% OF INDUSTRIAL PIPING

Jenkins Fig. 106-A Series

● With only four bodies and a handful of interchangeable parts, you can assemble 18 different valves of the 106-A "family". Meeting 90% of all industrial piping needs, you can understand why the 106-A Series is so justly famous. The renewable disc, fitted in the slip-on stay-on disc holder, assures drop-tight closure and lasting economy under the toughest service conditions.

NEW 12 PAGE FOLDER NOW READY, describing the many easily-assembled combinations of the 106-A "family" of Renewable Composition Disc Bronze Valves and including a Disc Guide. Ask your Jenkins Distributor for it. Jenkins Bros., 80 White St., New York 13, N. Y.

LOOK FOR THIS DIAMOND MARK

JENKINS VALVES

TYPES, SIZES, PRESSURES, METALS FOR EVERY NEED

BREVITY—Identify by IEN - 1747 if you write the maker

B.F.Goodrich

Don't read this ad—

if you're an industrial tire and wheel expert!

IF you *aren't* an industrial tire and wheel expert, The B. F. Goodrich Company wants to put a trained man at your service—without obligation. Your local BFG representative has been specially trained to analyze industrial tire operations, and to make impartial recommendations regarding size, type, tread compound, care and maintenance. These recommendations are valuable to you. In many cases, they have brought about a direct savings in tire and wheel costs of up to 50%. The recommendations this tire and wheel analysis man makes are impartial and unbiased because the B. F. Goodrich line is a *complete* line of tires: 14 types, 7 tread compounds and a full range of sizes.

Call your B. F. Goodrich man today. Let him survey your operation . . . study loads, hauls, equipment, hauling surfaces and floors. Then let him make his recommendations. You'll be amazed at the savings you can realize. *A similar program is available for the manufacturers of industrial hauling equipment.*

Write for full details of the

TW ANALYSIS PLAN

at no obligation

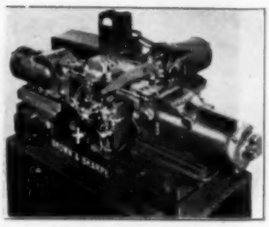
The B. F. Goodrich Co.
Department TW-84
Akron, Ohio
Please give me additional information on your new Tire and Wheel Analysis plan.

Name_____
Title_____
Company_____
City_____ State_____

BREVITY—Identify by IEN - 1749 if you write the maker

DRILLING . . Special machine for locating holes in engine blades

Source: BROWN & SHARPE MFG. CO.
235 Promenade St., Providence 1, R. I.



Six strain gage indicator points are brought into contact with the airfoil surface of a jet engine blade and are employed to locate the blade, in connection with a reed-mounted cradle, for center drilling and facing on bosses on the blade. The center holes then serve for locating purposes in a subsequent machining operation on the holding surfaces.

Indication is obtained from one of the company's electronic amplifiers and a multiple-position switch that permits selection of individual gages in the initial setup. Additional switch positions interconnect all of the gages to show individual average indications for the three movements required to bring the airfoil surface to its correct position. An operator can position and drill 100 blades per hour.

BREVITY—Identify by IEN - 1750 if you write the maker

PAINTING . . Synthetic liquid produces dull finish on stainless steel

Source: UNITED LACQUER MFG. CORP.
1003 W. Elizabeth Ave., Linden, N. J.

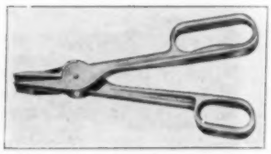
Also in colors for general use

Type VB-248 is a new plastic synthetic finish initially developed to coat guided missiles, instruments, apparatus made of stainless steel to kill reflection from the steel surfaces. The material adheres to a polished surface. It colors the surface a dull black. The company will advise on application.

BREVITY—Identify by IEN - 1751 if you write the maker

PRESS TOOLS . . Magnesium tongs to handle work in and out of dies

Source: MAGLINE INC.
1947-51 Mercer St., Pinconning, Mich.



Two lengths are 12 and 16 in. in this new cast-magnesium tong. It has been designed to handle work into and out of press dies. It protects the operator against the possibility of crushed fingers. It also protects the tools by crushing harmlessly in the event it is caught.

The grips are large enough to take a gloved hand. A concealed spring holds the jaws normally open, assists in releasing work reached into a die. Weights are 6 and 12 ounces. Jaw length is 2¼ and 2¾ inches. Jaw width is ½ and 1 inch.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

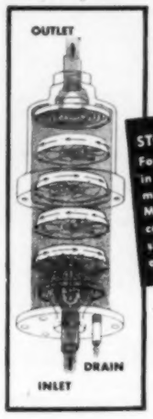
BREVITY—Identify by IEN - 1752 if you write the maker

Expanding? . . . then by all means investigate the versatile new truck-mounted BANTAM CRANE. Saves thousands of dollars over cost of fixed structures . . . GOES ANYWHERE in a hurry . . . lifts up to 10,000 lbs. . . . handles 50' boom, 29" magnet, with fast-change ⅜ cu. yd. (and larger) loading buckets. Gives complete flexibility of application for full or part-time work, with high resale or rental value when no longer needed. Write Schield Bantam Co., 254 Park St., Waverly, Iowa. SB-1-3S

SCHIELD BANTAM
Costs less . . . goes anywhere fast
GETS MORE JOBS DONE

BREVITY—Identify by IEN - 1753 if you write the maker

Why does an ARIDIFIER



REMOVE 92% OIL, WATER AND DIRT FROM GAS AND AIR LINES?

STUDY EXPLODED VIEW FOR ANSWER
Four multi blade rotors revolve at high speed in opposite directions under impact of air movement through non-aligned rotor spaces. Moisture, dirt and other foreign matter which collect on rotor blades are thrown out of air stream by centrifugal force to side of housing, and pass into drain.

For paint and lacquer spraying, ceramic, sand blasting, air cleaning, etc. Easily replaces less efficient baffle type devices. Tell us details of your problem when you write for a catalog.

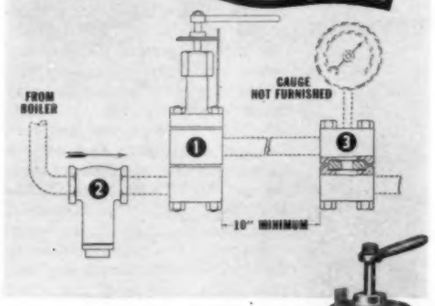
CAPACITY RANGE: AS LOW AS 7 CFM TO 17,000 CFM.

Made By The Manufacturers of Logan Lathes and Shapers.

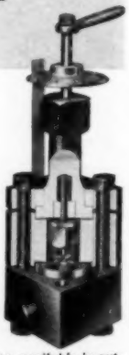
Logan ENGINEERING CO.
4902 W. LAWRENCE AVE., CHICAGO 30, ILL.

BREVITY—Identify by IEN - 1754 if you write the maker

Custom-Built... CONTINUOUS BLOWDOWN



STRONG Dual-Orifice Assembly gives Greater Accuracy . . . Rugged Service!



Also available in outside screw and yoke.

Strong's Continuous Boiler Blowdown Assembly includes a Strong *block steel* Evrtyte* Valve (1), a strainer (2) and an orifice block (3), *custom-built* and accurately sized *for your own job conditions.*

The assembly is essentially two orifices arranged in series. The first orifice (valve) is variable . . . . the second is fixed. Correct proportioning of orifices provides extremely accurate control and reduces wire drawing.

Strong Evrtyte steel valves have special Anum-Metl X seats and discs of 750 Brinell surface hardness for long life. Available for pressures to 1500 psi and temperatures to 800° F. or 6000 psi non-shock cold service.

Let us custom-size your continuous blowdown system. Send for Catalog No. 63-1 and our Continuous Blowdown Check-Chart today!

*Reg. Trade Mark

STRONG, CARLISLE & HAMMOND COMPANY
1392 WEST 3rd Street
Cleveland 13, Ohio

†Anum-Metl Reg. Trade Mark

OTHER STRONG STEAM SPECIALTIES

Reducing Valve — 80 Series Trap — Strainer

STRONG

▼ BREVITY—Identify by IEN - 1756 if you write the maker ▼

THREE WAY—Two Position—Normally Closed —Normally Open—Directional Flow
TWO WAY—Normally Closed and TWO WAY—Normally Open

* Skinner Solenoid Valves are only 2¾" high x 1⅝" dia., yet have large capacity within a standard range of 5 to 250 p.s.i. or special from 5 to 850 p.s.i. Progressive designers will like the accurate, long-lived, positive action, whether used for liquid or gaseous media. Skinner Valves have soft insert seats to prevent leakage—spring loaded for positive action — power consumption of 10 watts max. — usable in any position—pipe connections to suit your specifications—special coils for high humidity or high temperature applications can be supplied.

Standard models approved by Underwriters' Laboratories.

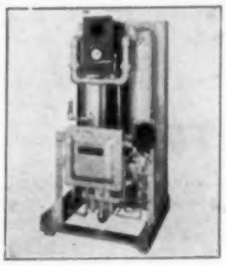
Write for Bulletin No. 501

Skinner ELECTRIC VALVE DIV.
THE SKINNER CHUCK COMPANY
134 Belden Ave., Norwalk, Conn.

▼ BREVITY—Identify by IEN - 1759 if you write the maker ▼

DRYING . . Cycling dehumidifier rates 50 cfm. on 100 lb. at 70 deg. F.

Source: INDUSTROL CORP.
470-74 Westfield Ave., Roselle Park, N. J.



Explosion proof design has been added to the company's Dynamic dehumidifier, previously described IEN-6781-50, to remove moisture from a line carrying compressed air in a flammable location. Primary purpose is to supply dry air for instrument operation. The equipment is automatic, connects to a 110-volt 60-cycle power source. Air-line connections measure 1 inch.

Two steel drying chambers are filled with Sovabead desiccant and are connected for alternate operation on and off the air line. A timer actuates a solenoid valve that switches from one to the other after each six hours of operation. The timer also energizes heating elements to drive water vapor from the desiccant that has just been switched off. Air flow of 2 cfm. is diverted to carry the moisture away.

This action continues on one chamber for a period of 3½ hours. Then the heating element is disconnected automatically, the purging air is shut off and the chamber and desiccant cool by radiation for 2½ hours. This brings the elapsed time to the start of the next interval when the purged and cooled chamber returns to the active side and the other connects for purging. List price is a little under $1,000.

▼ BREVITY—Identify by IEN - 1762 if you write the maker ▼

For a Small, Localized Supply of Warm or
HOT WATER
Use
POWERS
STEAM and WATER MIXERS

(SW)

ECONOMICAL—Quickly pay back their cost. Thousands now in use. *Easy to Install.*

Requires steam and water pressures above 10 lbs. Steam is mixed directly with water.

MANY USES—Industrial processes; 180° F. sterilizing rinse water for dishwashers; washing oil drums, trucks, etc.

TEMPERATURE RANGE—Any temperature desired between that of incoming water and 200° F.

HAS PRESSURE EQUALIZING VALVE—which prevents delivery temperature changes caused by fluctuating pressures of steam or water.

SMALL SIZE—½" pipe size can be held in the palm of the hand, has 5" dial; ¾" size has 7" diam. dial.

CAPACITIES—based on steam and water at 45 lbs. pressure each, water at 60° F., and delivery temperature of 160° F.:—½" size = 3 gals. per min.; ¾" size = 8 gpm. Mixing steam with 140° F. water increases delivery about 75%. Often used as a small booster heater. WRITE for Bulletin 358-S.

THE POWERS REGULATOR COMPANY
2737 Greenview Avenue, Chicago 14, Illinois
Established 1891 • Offices Over 50 Cities • See Your Phone Book

▼ BREVITY—Identify by IEN - 1757 if you write the maker ▼

WESTERN FELT:
Your Insurance Against Complaints

Felt is not "just felt." There is a vast difference in its manufacture and efficiency. Because Western Felt for over fifty years has not, and will not, depart from its policy of maintaining the highest possible quality in material and manufacture, its products wherever they may be employed, are your insurance against product complaints due to a Western Felt component part. It ranges from wool softness to rock hardness—never loses shape—does not ravel or fray—resists oil, water, heat, age—resilient, flexible, compressible—may be cut to extremely close tolerances—unsurpassed in uniformity. 102F

WESTERN FELT WORKS
4035-4117 Ogden Avenue, Chicago 23, Illinois
BRANCHES IN ALL PRINCIPAL CITIES
Largest Independent Manufacturers and Cutters of Wool, Hair and Jute Felts

▼ BREVITY—Identify by IEN - 1760 if you write the maker ▼

LUBRICATING . . Pneumatic lubricator delivers air-oil fog to bearings

Source: C. A. NORGREN CO.
220-24 Santa Fe Drive, Denver 9, Colo.

Micro-Fog trade names new lubricator in the company's line of pneumatic equipment. It breaks the supply of oil held in the reservoir into particles measuring 2 microns or less for delivery suspended in air through a pipe line to one or more machine bearings. The lubricator is made in 8 models with capacity at 1 to 14 cfm. and 10 to 80 lbs. for application in ¼ and ⅜-in. pipe lines. Maximum safe operating pressure is 125 pounds. Reservoir capacity is ⅓ and ½ pints.

The oil fog remains in suspension in the air stream to be carried over long distances and held for considerable periods prior to reaching a bearing. Control permits metering the oil to a minimum of one drop in 20 minutes. No oil drops will enter the outlet pipe line and the possibility of oil collecting in the line or flooding the equipment served is remote. Flow of oil can be seen at the lubricator. Operation can be tied in with a machine so the fog is generated and delivered when the machine is started and stopped when the machine is stopped.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 1763 if you write the maker ▼

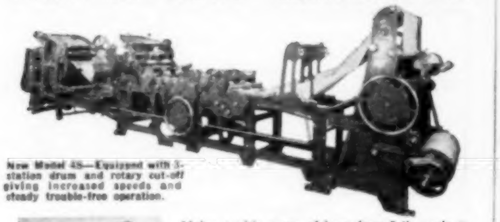
IT'S HERE!
79E
The New Miracle Grinding Wheel Bond That Gives You 79 extra Minutes Of Vital Production Efficiency Each Day!

TEST IT YOURSELF!
Try Chicago Wheel's remarkable new "79E" Bond in your own plant, on your own type of production. Accept our invitation to make this proof positive test . . . write today for your free sample grinding wheel or mounted wheel bonded with "79E"

CHICAGO WHEEL & MFG. CO. Dept. N
1101 West Monroe Street, Chicago 7, Illinois

▼ BREVITY—Identify by IEN - 1758 if you write the maker ▼

POTDEVIN
SATCHEL-BOTTOM
PAPER BAG MACHINES



New Model 4S—Equipped with 3-station drum and rotary cut-off giving increased speeds and steady trouble-free operation.

ANILINE PRESS

S.O.S.

Makes a wide range of bags from 5 lb. sacks to huge super-market carrier bags. Has adjustable former to vary sack widths, trade-mark imprinting unit, 2 hole punch and scoring device for string handles, roll lifting mechanism for easier loading.

Can be directly connected to a Potdevin multi-color aniline press. Compensator and electric eye can be added for preprinted papers as well as liner for two-wall (duplex) bags.

Literature on request.

POTDEVIN MACHINE CO.
1213 38th Street, Brooklyn 18, N. Y.

Designers and manufacturers since 1893 of equipment for Bag Making, Printing, Coating, Gluing and Labeling. POTDEVIN

▼ BREVITY—Identify by IEN - 1761 if you write the maker ▼

SHAKEPROOF "SPEED NUTS"*
Simplify Assembly
AND REDUCE COSTS!

SEND FOR Free Test Kit AND PROVE IT TO YOURSELF!

Shakeproof "Speed Nuts" increase speed of assembly, ease of application and resistance to vibration loosening—three important phases of greater fastening efficiency. Light-weight, Flat Type "Speed Nuts" replace ordinary nuts; U and J Type "Speed Nuts" are self-retaining, perfect for blind and hard to reach fastening points; Latching Type is self-retaining at mid-panel locations. Test and try Shakeproof "Speed Nuts" on your own product. Write for free Sample Kit No. 30 today.

U-TYPE FLAT TYPE J-TYPE

*T.M. Reg. U.S. Pat. Off. by Tinnerman Products, Inc.

SHAKEPROOF inc.
Fastening Headquarters
DIVISION OF ILLINOIS TOOL WORKS
2501 North Keeler Avenue, Chicago 39, Illinois

▼ BREVITY—Identify by IEN - 1764 if you write the maker ▼

Saves 2 out of 3 hours!

ROTARY ELECTRIC IMPACTOOL

A motor rebuilding shop in the Southwest introduced electric impactools on 5 hand operations with amazing results, which speak for themselves:

	By hand	With Impactool
1. Disassembly	70 minutes (longer if rusted)	30 minutes (even if rusted)
2. Installation of Crankshaft and Main Bearings	30 minutes	10 minutes
3. Connecting Rod Bearing Assembly	40 minutes	15 minutes
4. Installing Cylinder Head	20 minutes	5 minutes
5. Installation of Oil Pan	20 minutes	5 minutes
Total Time consumed per unit	180 minutes	65 minutes

The 115-minute saving per engine in this shop resulted in an additional net profit of over $50,000 in one year.

Send for your copy of Impactool Case History No. 5082-6.

Ask your Jobber for an Impactool demonstration.

No Motor Burn-Outs, can't stall motor
No-Kick, No-Twist to operator

Ingersoll-Rand
11 Broadway, New York 4, N. Y.
ORIGINATOR OF IMPACTOOLS—air and electric
375-16

Runs Nuts, Taps, Reams | Drills Masonry, Wire Brushes, Drives Screws | Drives Studs, Saws Holes, Drills | Bores Wood, Extracts Broken Studs

BREVITY—Identify by IEN - 1765 if you write the maker

No Water Hammer! No "Hunting!"

- Single seat; pilot stem.
- Tight closing; non-sticking.
- Renewable disc; no internal packing.

DAVIS NO. 60 FLOAT VALVE

THE Davis No. 60 Float Valve, illustrated here, is unexcelled for dependable performance. It handles either hot or cold water with no "hunting," no "water-hammering." Opens easily against any pressure up to 125 p.s.i. and closes positively drip tight. No sticking; there is no internal packing to swell and cause excessive friction. Built in sizes, ½" to 12". Standard construction—composition disc, bronze trim. All bronze or stainless trim available. Contact your distributor or write Davis Regulator Co., 2529 So. Washtenaw Ave., Chicago 8, Ill.

BREVITY—Identify by IEN - 1766 if you write the maker

INDIVIDUAL CUTTING OIL SANITATION

FOR YOUR PLANT!

HERE'S HOW TO PREVENT costly coolant spoilage and eliminate foul odors: ask your DOLGE Service Man to take samples of your coolant for free bacteriological and chemical analysis. A complete laboratory report will show the correct coolant handling method for your particular operation.

Only if tests warrant it will a DOLGE STERIDOL GERMICIDE be recommended—a "tailor-made" preparation to meet your exact needs. Used as directed it will not irritate the skin or corrode metals. The cost?—Far less than a cent per gallon of coolant!

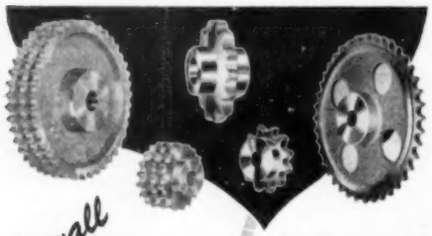
Write for Booklet "Cutting Oil Sanitation"

STERIDOL

dependable DOLGE

WESTPORT, CONNECTICUT

BREVITY—Identify by IEN - 1767 if you write the maker



Sewall STOCK SPROCKETS

★SPEEDY SERVICE

★PRECISION BUILT

★COMPLETE LINE

If your product will permit a standard pitch, look it up in the Sewall Catalog of Stock Sprockets. Or let us send you an estimate on your special design. True running, durable gears and sprockets all add up to overall quality in Sewall products.

CUSTOM-BUILT GEARS for every requirement

Distributors of Atlas Roller Chain

Send for FREE Sprocket CATALOG

or Phone Us at NEstar 1381

E. B. SEWALL MANUFACTURING CO.

686 Glendale St. • St. Paul 4, Minn.

NEW LITERATURE

Brief reviews to advise you of available new information published by the manufacturers covering products they offer for your use. Identification, size of the material, information it contains so you can judge its value to you.

ABRASIVES . . "Borolon" aluminum-oxide abrasive grain for polishing; description of the material and its properties, size recommendation table. Folder ESA-198, 4 pages. Simonds Abrasive Co., Fraley & Tacony, Philadelphia 37, Pa. **IEN-0141**

BEARINGS . . "Ball Bushing" to support linear-motion shafts from ¼ to 4 in.; general description, drawing of the oblong path taken by the balls. Folder, 4 pages. Thomson Industries, Inc., 1027-31 Plandome, Manhasset, N. Y. **IEN-0142**

BLOWERS . . Split-wheel type for forced draft to a boiler; general design characteristics, notes on tie-in with other boiler auxiliaries. Catalog 300, 8 pages. Prat-Daniel Corp., 82-86 S. Water St., East Port Chester, Conn. **IEN-0143**

BUILDINGS . . Movable steel partitions for building interiors; color illustrations of typical laboratory and office installations. Bulletin, "The Inside Story . .", 16 pages. E. F. Hauserman Co., 6021-25 Grant, Cleveland 5, Ohio. **IEN-0144**

BUILDINGS . . Acoustical tile for building interiors; types, properties, mounting methods, sample specifications. Bulletin, "Fiberglas Design Data AC6.A1", 8 pages. Owens-Corning Fiberglas Corp., 100 Nicholas Bldg., Toledo 1, Ohio. **IEN-0145**

CHEMICALS . . Synthetic organic chemicals including acetic acid, acetates, acetaldehyde, acetaldol, acetonitrile; properties, uses. Bulletin F-7400, 56 pages. Niacet Chemicals Div., 912-14 Niagara Bldg., Niagara Falls, N. Y. **IEN-0146**

CHUCKS . . Ball-bearing self-centering drill chuck of Danish make; data on ¼ to ⅝-in. sizes along with a review on operating features. Bulletin, "Hjort Chuck", 4 pages. Hauser Machine Tool, 28-32 Park Ave., Manhasset, N. Y. **IEN-0147**

CLAMPS . . Screw-type hand clamps in "C", bar, quick-adjusting designs; specifications, list prices, also hand tools including chisels, punches. Catalog 49, 40 pages. Cincinnati Tool Co., 1949-53 Waverly, Cincinnati 12, Ohio **IEN-0148**

CLEANING . . Continuous abrasive-blast cleaning units for production parts; cut-away view and operating description, user reports. Bulletin 454, 8 pages. American Wheelabrator & Equipment Corp., 14 S. Byrkit St., Mishawaka, Ind. **IEN-0149**

CLEANING . . Washing machines for metal parts; operating diagrams to show the work sequence, typical assembly examples. "Washing Machines", 28 pages. G. S. Blakeslee & Co., 52nd Ave., & 19th St., Chicago 50, Ill. **IEN-0150**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1768 if you write the maker

Leach RELAYS

Precision is the Keynote—in Production and Performance

The word precision perfectly characterizes every relay manufactured by LEACH, and this precision is most apparent in their performance. Whatever the purpose, LEACH can provide relays of advanced design for flexibility, economy and unexcelled performance. Highest standards of engineering, materials and workmanship. For better controls through better relays—contact LEACH.

LEACH RELAY CO.

5915 AVALON BOULEVARD, LOS ANGELES 3, CALIF.

Representatives in Principal Cities of U. S. and Canada

BREVITY—Identify by IEN - 1769 if you write the maker

● The Stuard AUTOMATIC AIR SEPARATOR removes all moisture, oil and foreign matter from air lines. Does not waste air by continuous venting. Patented one-piece separator and eliminator chamber. Write for bulletin.

R&IE STUARD AUTOMATIC

AIR SEPARATOR

RAILWAY and INDUSTRIAL ENGINEERING CO.

KERR ST. GREENSBURG, PA.

BREVITY—Identify by IEN - 1770 if you write the maker

Instead of this

BETTER BUY BERNZ

Hottest, Handiest Torch FOR ANY JOB!

A mighty mite for man-size jobs. Weighs only 2½ lbs., burns in any position, any time, even at minus 40° F. Complete with pencil flame and utility burners. Slick-as-a-whistle orifice cleans in 30 seconds. Inexpensive cartridge refill at any LP dealer's. BETTER BUY BERNZ.

◆ Liquified Petroleum "Always Reliable"

◆ Burns up to 11 hours Since 1876

Patent Pending

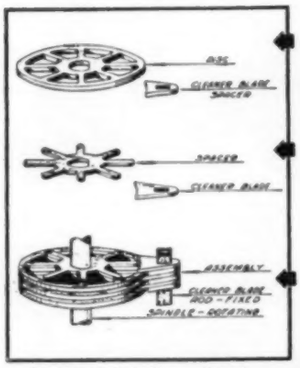
OTTO BERNZ

Otto Bernz Co.
280 Lyell Ave. Rochester 8, N. Y.
Please send me more information at once about the handy LP torch.
Name.....
Address.....
.....
My supplier is.....

BREVITY—Identify by IEN - 1771 if you write the maker

Non-Stop Fluid Cleaning

Why there's no loss of production due to strainer cleaning when you strain with Cuno AUTO-KLEAN



Turning metal discs past cleaner blades* . . .

combs out all solids, even imbedded in strainer . . .

without interrupting flow. No by-pass strainer needed.

*Periodically by hand or continuously by automatic means.

All-metal AUTO-KLEAN is *guaranteed* to remove all solids larger than specified spacings (.0035 in. to .062 in.) Write for free AUTO-KLEAN bulletin. Cuno Engineering Corporation, 696 South Vine Street, Meriden, Conn.

CUNO

Fluid Conditioning

Removes More Sizes of Solids from More Types of Fluids

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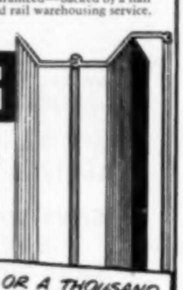
RAILS NEW and RELAYING

MOST COMPLETE STOCKS IN U. S.
SHIPPED "FASTER FROM FOSTER"
Foster matches sizes and specifications on any job. All material guaranteed—backed by a half century of specialized rail warehousing service.

STEEL SHEET PILING



RENT IT . . .
The Exact Lengths and the Exact Sections to meet all your needs. Also complete stocks of Light-weight Corrugated Steel Sheet Piling. Foster's new lower rental rates on all standard piling sections give you a low fixed expense as an added advantage when you bid on jobs; and you also get the famous FOSTER QUALITY GUARANTEE.

TRACK ACCESSORIES
STEEL PIPE
PIPE FABRICATION
WIRE ROPE
WIRE SLINGS
STEEL PLATE
Write for Pile Chart IE-4

ONE TON OR A THOUSAND
"FASTER FROM FOSTER"

L. B. FOSTER CO.
PITTSBURGH 30, PA. NEW YORK 7, N. Y.
CHICAGO 4, ILLINOIS HOUSTON 2, TEXAS

▼ BREVITY—Identify by IEN - 1773 if you write the maker ▼

"A penny saved is two pence clear"

—Ben Franklin's "Necessary Hints," 1736

In days when venture capital comes not forth, cutting costs in thy shop plows money back into thy business.

—Acme Steel Notebook, 1950

How healthy does *your* profit margin look in the face of higher taxes, higher costs?

Now—when pennies saved can mean the difference between profit and loss—is the time to observe the old American business virtues of *efficiency* and *thrift*.

Improved efficiency and greater thrift in the fields of packaging, shipping and materials handling are exactly what Acme Steel methods and products are achieving for some 50,000 users in almost every industry.

A written request on your business letterhead, specifying the Acme Steel products in which you are interested, will bring you free booklets containing full details.

ACME STEEL COMPANY
Dept. IEN-21, 2838 Archer Avenue, Chicago 8, Illinois
There are 46 Acme Steel service offices in the U.S. and Canada.

ACME STEEL

Acme Steel depends on a lot of other businesses, big and small. We buy each year about 35,000 items, ranging from coal and semi-finished steel to paper clips from some 1800 suppliers all over the country.

Stitching cartons with an Acme Silverstitcher is usually two to five times faster than other methods of carton assembly.

ACME STEELSTRAP flat steel strapping and ACME UNIT-LOAD carload bracing BAND, SEALS and TOOLS • ACME SILVERSTITCHER machines • ACME SILVERSTITCH stitching wire • ACME-MORRISON METAL STITCHERS and BOOK STITCHERS • ACME-CHAMPION BAG STITCHERS • ACME HOT AND COLD ROLLED STRIP STEEL • ACME GALVA-BOND steel slat stock for Venetian blinds • ACME STEEL SPECIALTIES, including hoops, corrugated fasteners, nail-on strapping and other container reinforcements • ACME STEEL ACCESSORIES—snips, cutters, punches, tool mounts, reel stands, coil holders, coil trays.

NEW LITERATURE—Continued

"Reviews total 101 this issue"

COMPRESSORS . . Portable air compressor with 30 cfm. capacity at 100 lb.; description of V-type construction, two mountings. Bulletin H-850-B72, 6 pages. Worthington Pump & Machy. Corp., 35-39 Appleton St., Holyoke, Mass. **IEN-0151**

CONDUCTORS . . Preformed helical rods to protect electrical conductors; application sequence shown by drawings, other uses. Bulletin 10-200, 4 pages. Preformed Line Products Co., 1049-53 Power Ave., Cleveland 14, Ohio. **IEN-0152**

CONNECTORS . . Electric plugs with spring-action blades, extension cord sets, reflector lamps, lamp sockets; data summaries, list prices. Catalog 161, 24 pages. Allied Electric Products, Inc., 70-96 Colt St., Irvington 11, N. J. **IEN-0153**

CONSTRUCTION . . Wood-frame trussed rafters; examples of use in building construction, notes on the company's connectors employed in assembly. Bulletin, 12 pages. Timber Engineering Co., 1317-21 18th St., Washington 6, D. C. **IEN-0154**

CONTAINERS . . Stainless-steel pails, cans, pitchers, dippers, measures, trays, mixing bowls, sink bowls, shovels; sizes, list prices. Bulletin 164, 4 pages. Schnitzer Alloy Products Co., 323-27 Pine St., Elizabeth 1, N. J. **IEN-0155**

CONTROLS . . "Densitrol" instrument to measure and control liquid density; operating principle, characteristics. Bulletin W-2, 8 pages. Precision Thermometer & Instr. Co., 1422 Brandywine St., Philadelphia 30, Pa. **IEN-0156**

COOLING . . Mechanical-refrigeration equipment for space cooling, process and material cooling, air conditioning; picletin W-2, 8 pages. Precision Thermometer & Instrument Co., 1422 Brandywine St., Philadelphia 30, Pa. **IEN-0156**

COOLING . . Electric units to cool drinking water; condensed data on fountain, glass-filler, bottle, special models, ture summary. Bulletin BCA-2637, 10 pages. Frigidaire Div., Sunroc Co., 51 Pennell Road, Glen Riddle, Pa. **IEN-0158**

CORROSION PROOFING . . "Zincilate" materials to protect metal surfaces; information on properties, application steps. Bulletin 100, 8 pages. Industrial Metal Protectives, Inc., 403 Homestead Ave., Dayton 8, Ohio. **IEN-0159**

CORROSION PROOFING . . Plastic-base coating and lining to corrosion-proof equipment; description of properties, typical application examples. "Lithcote", 8 pages. Lithgow Corp., 331-5 W. 40th Place, Chicago 9, Ill. **IEN-0160**

CORROSION PROOFING . . Impregnated wrapping paper for iron and steel parts; properties, application examples and instructions, user reports. "How Book", 20 pages. Nox-Rust Chemical Corp., 2427-31 S. Halsted, Chicago 8, Ill. **IEN-0161**

CRANES . . Application picture book of the company's crawler and rubber-tire cranes handling material in a variety of industries. Bulletin, "Lorains in Industry", 20 pages. Thew Shovel Co., 4321 E. 28th St., Lorain, Ohio. **IEN-0162**

CYLINDERS . . Oil-hydraulic power cylinders; cut-away construction, capacities, dimensions on single, double-acting and telescopic units. Catalog H-3, 56 pages. Commercial Shearing & Stamping, 1773-77 Logan, Youngstown 1, Ohio **IEN-0163**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

▼ BREVITY—Identify by IEN - 1775 if you write the maker ▼

A NEWS ADVERTISEMENT BY HONAN-CRANE CORP.

OIL DISPENSING . . "One-man" mobile unit for handling oils and coolants

**Source: HONAN-CRANE CORPORATION
subsidiary of HOUDAILLE-HERSHEY CORP.
802 Wabash Avenue, Lebanon, Indiana**

Designated the Houdaille Oil Dispensing Unit, new vacuum-pressure assembly offers clean, simple method of transferring oil from drums to machine tool reservoirs or sumps; transferring oil between drums; removing oils or coolants from tanks for dispensing to machine tool sumps. Unit adaptable to many other liquid handling problems.

Fully enclosed vacuum pump and ⅓ hp. motor, mounted on strong steel wheels equipped with roller bearings, are operated by a single manual switch. Three-way valve permits quick change-over from vacuum to pressure side of pump as needed. No liquid or abrasives pass through pump to cause wear or stoppage. An airtight lid for open-top drums, equipped with Mercoid liquid level control, prevents overflow and spillage. Pivoted platform is designed for easy loading and unloading of standard 55 gallon oil drums.

One man can easily operate unit at considerable savings in time and labor. Ideal for use where many individual sumps require servicing.

▼ BREVITY—Identify by IEN - 1776 if you write the maker ▼

Unit "UTILITY" HOIST
HYDRAULICALLY OPERATED FOR SHOP OR TRUCK
FAST... EASY... SAFE!

NOW . . . reduce material handling time to a minimum with the fast UNIT UTILITY HOIST. One man handles heavy loads where several men were used before. Eliminates serious accidents caused by heavy hand lifting. Reduces labor costs, increases work output per day.

★ FROM SHOP TO TRUCK HOIST in seconds! Simply lift UNIT UTILITY HOIST from 3-wheel frame, place in socket or well mounted on truck bed, work bench, loading dock or machine tool. Hoist swings 360° in well.

Write Dept. N for Complete Details

UNIT HYDRAULIC EQUIPMENT
Manufacturers of hydraulic cylinders for original equipment.

UNIT MANUFACTURING CO
1229 HARMON PLACE • MINNEAPOLIS 3, MINNESOTA

▼ BREVITY—Identify by IEN - 1777 if you write the maker ▼

FORCE
AUTOMATIC NUMBERING MACHINES
Columbia | Model 150

6 WHEEL MODEL ILLUSTRATED
OTHER MODELS MADE TO ORDER

SEND FOR CATALOG E
SHOWING COMPLETE LINE

THREE QUARTERS OF A CENTURY'S SERVICE

WM. A. FORCE & COMPANY, INCORPORATED
64 WHITE STREET, NEW YORK 13, N. Y.
The FORCE of NUMBERS

▼ BREVITY—Identify by IEN - 1778 if you write the maker ▼

TEMPILSTIKS°

the amazing Crayons that tell temperatures

in
WELDING
FLAME-CUTTING
TEMPERING
FORGING
CASTING
MOLDING
DRAWING
STRAIGHTENING
HEAT-TREATING
IN GENERAL

it's this simple:
• Select the Tempilstik° for your working temperature.
• Mark your workpiece with it.
• The Tempilstik° will leave a liquid mark as soon as its specified temperature is reached.

Available in these temperatures (°F)

113	213	313	450	850	1250	1650
125	225	325	500	900	1300	1700
138	238	338	550	950	1350	1750
150	250	350	600	1000	1400	1800
163	263	363	650	1050	1450	1850
175	275	375	700	1100	1500	1900
188	288	388	750	1150	1550	1950
200	300	400	800	1200	1600	2000

Also available in pellet and liquid form.

$2 each
gives up to 2000 readings

TEMPIL CORPORATION
132 W. 22nd St., New York 11, N. Y.

FREE—Tempil° "Basic Guide to Ferrous Metallurgy"—16½" by 21" plastic-laminated wall chart in color. Send for sample pellets, stating temperature of interest to you.

NAME ______
COMPANY ______
ADDRESS ______

BREVITY—Identify by IEN - 1779 if you write the maker

Investigate the Advantages of H & K PERFORATIONS

—for cleaning, grading, straining and filtering . . . guarding and ventilating . . . accoustical treatment . . . ornamental enclosure, and related problems of product and machine design.

You have a wide selection of patterns to choose from, all accurately perforated. For commercial processing, perforations may be had with as close as ±.0005". Materials include practically all metals and sheet materials such as plastics, fabrikoids, plywood, etc. Ornamental grilles are furnished in lightweight quality stainless, bronze, brass, aluminum, etc.

Perforated sheets may be furnished rolled, formed, sheared, welded, brazed or otherwise fabricated to your specifications.

Catalog No. 62 tells the "hole" story—write for it!

The Harrington & King Perforating Co.
5637 FILLMORE ST., CHICAGO 44, ILLINOIS
114 LIBERTY STREET NEW YORK 6, N. Y.

BREVITY—Identify by IEN - 1780 if you write the maker

Specially Designed! Specially Built! ALL-PURPOSE CASTER

Here it is! Albion Industries' Series 11 All-Purpose caster for light and medium duty service under all conditions. Ideal for those hundreds of caster applications in your plant. Series 11's are unbeatable—and they cost less than you think.

Drop forged steel top plate, rolled-in and hardened raceways, and formed all-steel legs welded to yoke. Wheel sizes 4", 5", 6" and 8". Metal, rubber and Texite wheels.

Write for catalog showing full line of casters

PROMPT DELIVERY

ALBION INDUSTRIES, Inc.
ALBION, MICHIGAN

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RELIABILITY—no gears, vanes, pistons. Nothing to get out of order or adjust. The mechanical packing seals never require attention.

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FREEDOM FROM PULSATION—continuous, axial flow.

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NEW LITERATURE—Continued

"Alphabetical to help you in finding"

CYLINDERS . . "Rotocast" hydraulic cylinders; sectional views, dimension drawings and tables, mounting accessories, selection nomographs. Catalog Section 200-2, 28 pages. Logansport Machine Co., 913 Center Ave., Logansport, Ind. **IEN-0164**

DRIVES . . Flexible shaft couplings for general-purpose use; sizes, hp. ratings, dimensions, list prices, also cast-iron V-belt sheaves. Bulletin 52, 4 pages. Climax Metal Products Co., 859 E. 140th St., Cleveland 10, Ohio. **IEN-0165**

DUST COLLECTING . . Electrostatic equipment for fly-ash collection in power plants; particle size analysis, summary of recent developments. Bulletin FA, 4 pages. Research Corp., 405 Lexington Ave., Room 3800, New York 17, N. Y. **IEN-0166**

ELECTRONIC PRODUCTS . . Hardware, fastenings, tools, connectors, adhesives and many others; condensed descriptions, list prices. Catalog 154, 64 pages. General Cement Mfg. Co., 917-21 Taylor Ave., Rockford, Ill. **IEN-0167**

ELECTRONIC PRODUCTS . . Catalog data and list prices on connectors, hardware, switches, cabinets, test and adjustment tools, dials. Catalog G-551, 36 pages. Insuline Corp. of America, 36-04 35th Ave., Long Island City 1, N. Y. **IEN-0168**

ENGINES . . Series-700 four-cycle diesel engine, 710 to 2,080 hp.; sectional drawings and high points in construction, rating curves, dimensions. Bulletin 320, 4 pages. Baldwin-Lima-Hamilton Corp., Paschall P. O., Philadelphia 42, Pa. **IEN-0169**

EXTINGUISHING . . Fluid-type stored-pressure fire extinguisher, 1-qt. capacity; detail description on operation and high spots in design. "Alfco Fire-Gun", 4 pages. American-LaFrance-Foamite Corp., 903 Erie St., Elmira, N. Y. **IEN-0170**

FASTENINGS . . "Truarc" retaining rings; illustrated basic types, condensed data on overall range, illustrated application suggestions. Folder, 4 pages. Waldes Kohinoor, Inc., 47-18 Austel Place, Long Island City 1, N. Y. **IEN-0171**

GAGES . . Manometers in U-tube, well, micro types, also pitot tubes; specifications on each type accompanied by list prices. Loose-leaf bulletin, "Manometers", 6 sheets. Corry Instrument Co., 36-40 E. South St., Corry, Pa. **IEN-0172**

GAGES . . Flush-mounting cell and amplifier to measure dynamic air pressures; illustrated typical circuit, performance characteristics, sizes. Form SA, 8 pages. Electronic Associates, 780-N El Camino Real, San Carlos, Calif. **IEN-0173**

GLASS PARTS . . Standardized glass cylinders, 1¼ to 24 in. in diameter, ½ to 48 in. in length; description, types of finish, list prices. Catalog C-51, 12 pages. Dunbar Glass Corp., 23-27 Hugh Bldg., Dunbar, W. Va. **IEN-0174**

GRINDING . . Bench and pedestal tool-grinding machines, polishing machines; illustrated data summaries in three data sheets. Bulletins 1010, 1020, 1030, 2 pages each. Brown-Brockmeyer Co., P. O. Box 976-A, Dayton 1, Ohio. **IEN-0175**

GRINDING . . Commutator dressing and finishing stones; detail specifications, application suggestions, also a hoist limit switch. Catalog 15, 20 pages. Co-Operative Utilities Co., 4635-41 Mulberry St., Philadelphia 24, Pa. **IEN-0176**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

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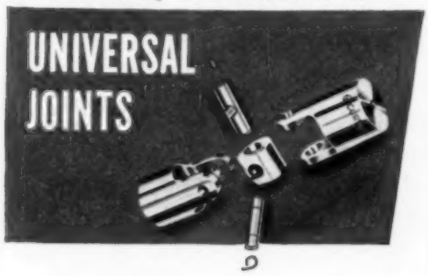

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With Gerrard Round Steel Strapping, diagonal bracing reaches top efficiency. No matter what the angle at which Gerrard Round Steel Strapping is applied, there is no loss of tensile strength or gripping and holding power. Smooth, round strapping presents no sharp edge as a hazard. Straps do not catch or snag when cartons are stacked. Lumber costs of crates and boxes are cut substantially since no wooden diagonal or cross members are needed for reinforcement. And lighter weight of crates means lower freight costs.

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QUICK CONNECTIVE HIGH PRESSURE TWO-WAY SHUT-OFF COUPLINGS

Both ends of line are positively sealed when you disconnect the Hansen High-Pressure Two-Way Shut-Off Coupling. To connect, merely pull back sleeve and push plug into socket. Identical torpedo type valves in plug and socket permit free flow of gas or liquid. To disconnect, pull back sleeve—coupling disconnects and valves automatically and instantly seal both ends of line.

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BREVITY—Identify by IEN - 1789 if you write the maker

WEIGHING . . Hydraulic scale suspends from crane hook, to 50 ton

Source: HYDROWAY SCALES INC.
20622-26 W. 8 Mile Road, Detroit 19, Mich.

New design of the company's hydraulic crane scale, previously described IEN-817-50, is available with a dial face that can be tilted downward through a 25-deg. angle by insertion of a V-section between the dial and the hydraulic-chamber housings. This arrangement is available to specification in rigid, non-adjustable assembly at the factory.

The tilted position brings the dial face into improved reading position when the scale is suspended from a crane hook. The unit is available now in capacities to 50 ton. As in the previous design, the load causes a piston to displace fluid that operates the weight indicating mechanism.

BREVITY—Identify by IEN - 1790 if you write the maker

SOLDERING . . Rosin core wire for radio and electronic assemblies

Source: ANCHOR METAL CO.
85-89 Walker St., New York 13, N. Y.

Solder alloy as specified

Shurflo is a new rosin-core wire-form solder packaged on spools with the wire diameter in a range of sizes upward from .01 inch. The solder contains an activating agent for vigorous fluxing action. The agent is consumed in the soldering operation so all that remains on the completed connection is the pure rosin. Application can be made on brass, cadmium, nickel, zinc as well as the usual metals.

BREVITY—Identify by IEN - 1791 if you write the maker

STORING . . Small parts bins with scoop openings to fill from rear

Source: STACKBIN CORP.
1077 Main St., Pawtucket, R. I.

New design of the company's small-parts bins that have been developed particularly for use at assembly stands now include an opening at the rear so each of the bins can be filled individually without removing it from a set-up or interfering with assembly work on the opposite side. Construction includes locked welded assembly with smooth folded edges in an arrangement that permits stacking and nesting side by side to form a semi-circle for each assembler.

Bottoms are shaped and slanted so the work moves toward the front by gravity. Range of sizes is the same as for the company's previously-described line of small parts bins.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

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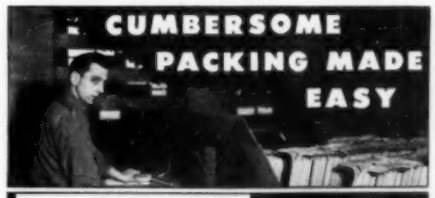

● This manufacturer of lawn mower handles found that he could greatly simplify his packing and shipping operations by using an International Retractable Anvil Staple Machine.

● In the top picture you see the handles being laid in the carton. Then the operator Staples the *filled* cartons from the outside. Prior to the installation of our equipment, it took *three* men to perform this job! If you ship in corrugated or fibre containers, chances are you too can save time and money with International Retractable Anvil Staple Machines.

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Slotted base permits direct measurements from any plane surface without calculations . . . a great time saver for toolmakers, inspectors, layout men. Fine vertical adjustment facilitates accurate measuring or scribing. Scriber readily removable for sharpening and reversible with convenient mounting hole for dial indicator. Other features: adjustable Vernier plate; base and scriber hardened and lapped; hardened bar; accurate, easy-reading, machine-divided graduations.

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Starrett *New Tools Booklet* describes and illustrates Vernier Height Gage No. 354 and over 60 more new Starrett Tools. Write for your free copy today. Address, Dept. N.

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BREVITY—Identify by IEN - 1794 if you write the maker

This new edition of "HAYNES Alloys for High-Temperature Service" summarizes all the available data on 10 super-alloys. Besides physical and mechanical properties on two newly developed alloys—HAYNES alloys Nos. 25 and 36—the booklet now contains additional data on all 10 alloys.

Every engineer and metallurgist who designs or specifies equipment for service at elevated temperatures should have this 96-page book. Write to the General Office in Kokomo, Indiana, for a copy.

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"Haynes" is a registered trade-mark of Union Carbide and Carbon Corporation.

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Cut Production Costs . . . Permit Ease of Assembly

HERE'S HOW

- Eliminate skilled labor in key seat cutting and key fitting operations.
- Are easy to assemble because of flat key bottom and starting radius.
- Key reaches deep into shaft and is firmly imbedded, enabling it to withstand greater strain.
- Offer greater resistance to shaft fracture due to shape of key set and permanent key fit.
- Simplify key seat cutting in tapered shafts.

Whitney Woodruff Type Keys are made to American Standard sizes and Whitney Standard sizes for special application. They are available from Whitney distributors throughout the country or write:

WHITNEY CHAIN COMPANY
202 Hamilton Street, Hartford 2, Conn.

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Horizontal and Vertical!

Pneumatic Cylinders

Both models deliver 80 lbs. pressure on a line pressure of 100 lbs. They'll save countless man-hours in assembly operations involving welding, riveting, bolting, etc. *Advantages over mechanical clamps:* 1. Any number can be operated by single master valves. 2. Easily installed in cramped corners. 3. Equal ram pressure at any stroke point. Send for new Mead AIR POWER Catalog, describing our line of Air Clamps, Air Vises, Air Presses, Work Feeders, Valves, Controls, etc.

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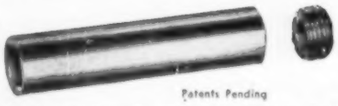

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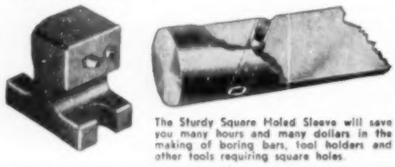
One of the most difficult problems in tool making can be solved easily and quickly with Sturdy Square Holed Sleeves. The perfection of broached square holes can be had in boring bars, milling cutters and many other applications at a small fraction of the cost of imperfect hand-made square holes. The Sturdy Square Holed Sleeve consists of a round sleeve with a perfectly square hole broached through the center. This hole is tapped at one end to receive a back-up screw which is furnished with the Sleeve. The Sleeve can be sweated or pressed into a drilled and reamed hole to make a perfectly square accurate hole in a very few minutes.



The Sturdy Square Holed Sleeve will save you many hours and many dollars in the making of boring bars, tool holders and other tools requiring square holes.

BUSHINGS MADE IN FOLLOWING SIZES:

3/16, 1/4, 5/16, 3/8, 7/16, 1/2, 5/8, 3/4, 1"

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NEW LITERATURE—Continued

"Addresses so you can write direct"

GRINDING . . Machine to sharpen side head knives on wood-working equipment; general description with particular emphasis upon gage details. Bulletin C-5, 2 pages. Dependable Machine Co., P. O. Box 839-A, Greensboro, N. C. **IEN-0177**

GRINDING . . Type-CH hydraulic cylindrical grinding machines; information on 10 and 14-in. models including a detail description of construction. Catalog B-50, 22 pages. Landis Tool Co., 26 E. Sixth St., Waynesboro, Pa. **IEN-0178**

GRINDING . . Hanchett-type automatic rotary surface grinding machines; general description on construction and features. Bulletin 245-2RM, 8 pages. Mattison Machine Works, 543-47 Blackhawk Park Ave., Rockford, Ill. **IEN-0179**

GRINDING . . Surface grinding machine, 8 by 12 by 12-in. capacity; general description, specifications, typical examples of its application. Bulletin, "Model MG", 4 pages. Sanford Mfg. Co., 1022-26 Commerce Ave., Union, N. J. **IEN-0180**

HEAT TREATING . . Pit-type controlled-atmosphere furnaces; typical section drawing and description, calculations on load size. Bulletin SC-149, 4 pages. Surface Combustion Corp., 2373-77 Dorr St., Toledo 1, Ohio. **IEN-0181**

HEATING . . Gas-burning equipment for brazing, soldering, heat treating; illustrated data summaries on a range of designs. Condensed Catalog, 8 pages. Gas Appliance Service, Inc., 1207-9 Webster Ave., Chicago 14, Ill. **IEN-0182**

INSULATING . . Conductor-rail supports for traveling cranes; catalog descriptions on a line of standard units, table of resistance data for rails. Bulletin 5005, 8 pages. Delta-Star Electric Co., 2437 Fulton St., Chicago 12, Ill. **IEN-0183**

INSULATING . . "Unibestos" pipe covering and insulating block; performance curve and data on two types for 750 and 1,200 deg. F. Folder 48-1025, 4 pages. Union Asbestos & Rubber Co., 1825-29A S. 54th Ave., Cicero 50, Ill. **IEN-0184**

INSULATING . . "Z-Crete" cast underground pipe insulation for heated lines; properties, conduit sections and design data, expansion provision drawings. Bulletin Z-11, 8 pages. Zonolite Co., 133-37 S. La Salle St., Chicago 3, Ill. **IEN-0185**

LATHE TOOLS . . Circular cut-off tools for B. & S. No. 00, No. 0 and No. 2 automatic machines; drawings, dimensions and list prices on 106 standard sizes. Bulletin C, 4 pages. Hardinge Bros., 1416-20 College Ave., Elmira, N. Y. **IEN-0186**

LATHES . . Model 12-A automatic machine for long and short-run turning; typical work-cycle diagrams, specifications, application notes. Folder 12-A-1, 8 pages. Sundstrand Machine Tool Co., 2529-33 11th St., Rockford, Ill. **IEN-0187**

LIGHTING . . "Magna-Lite" fluorescent fixtures, two-lamp slimline type; illumination data, illustrated construction points, uses. Bulletin DR-2, 4 pages. Metalcraft Products Co., 304-310 Cherry St., Philadelphia 6, Pa. **IEN-0188**

LIGHTING . . Fluorescent fixtures; models, dimensional drawings and tables, illumination data, list prices, accessories available. Catalog L-212, 32 pages. Smithcraft Lighting Div., 231-5 Everett Ave., Chelsea 50, Mass. **IEN-0189**

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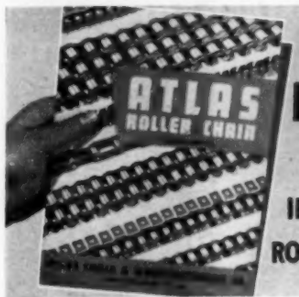

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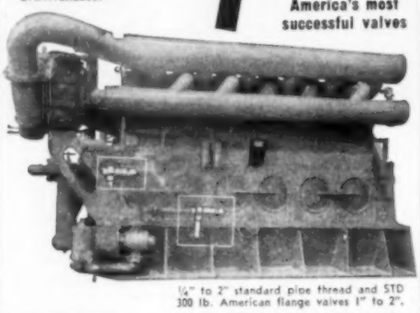

¼" to 2" standard pipe thread and STD 300 lb. American flange valves 1" to 2".

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3/16" Orbital Motion

$34.50

Makes a hundred tedious jobs fast and easy. Will sand to the bare wood or metal, featheredge, or smooth and polish to a "piano finish." Powerful direct-connect, 3450 r.p.m. 110 v., A.C. air-cooled motor. No gears, nor gear-housing to collect grit and dust. Sealed ball-bearing thruout. Cast-aluminum body and chrome plated—in hand weight only 5 lbs. Natural grip, all-position handle with sliding thumb switch and 3 wire rubber-covered cord.

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Three 4½" x 6½" coverings cut from standard 9" x 11" abrasion sheet.

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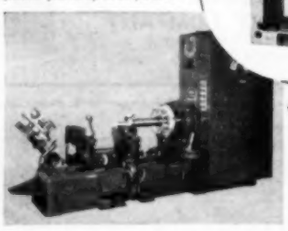
FOR WANT OF ~~A NAIL~~
Tire Might be
THE ~~SHOE WAS~~ LOST

THAT'S WHY THEY USE THESE
NAMCO SOLENOIDS

Valvair Three-Way Valve, as employed on NRM Model 49 Tire Building Machine. Integral Namco Solenoid is 17-lb. pull type.

Namco No. 16K200 Pull-Type "Stellite"-welded Solenoid, as designed into the Valvair Three-Way Valve employed on the National Rubber Machinery Model 49 Tire Building Machine. This 17-lb. pull, 1" stroke Solenoid is only one of many standard types available to provide a push or pull of up to 25 pounds.



National Rubber Machinery Model 49 Tire Building Machine with Valvair Corp. controls, Namco "Stellite"-welded Solenoid - equipped. Note also the use of Namco Snap-Lock Limit Switches.

Precision performance and dependable, high-speed, heavy-duty operation—those are service characteristics every Namco "Stellite"-welded Solenoid takes in its stride. It's the top choice of machinery-builders for other reasons, too—compactness, simplicity, low current consumption are just a few. Available in either push or pull type (up to 25 lbs.) in a variety of standard mountings to meet every commercial need. Our engineers will be glad to help you select the size and type, either standard or modified mounting, to fit your exact requirements.

Complete standard range of Namco "Stellite"-welded Solenoids is illustrated and tabulated in Engineering Bulletin EM-46A. Ask for your copy.

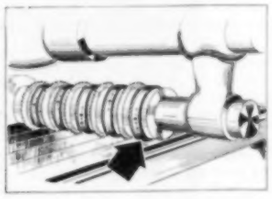
178 East 131st Street Cleveland 8, Ohio
ELECTRICAL MANUFACTURING DIVISION

NATIONAL ACME
CLEVELAND, OHIO

▼ BREVITY—Identify by IEN - 1806 if you write the maker ▼

MILLING . . Adjustable collar to position milling cutters on an arbor

Source: DAYTON ROGERS MFG. CO.
2822-26 13th Ave., So., Minneapolis 7, Minn.



Sizes range from ⅛ to 2 in. in a "thin" series and a "wide" series in this new adjustable collar. Width can be altered in the thin series by $\frac{1}{32}$ in. for ⅞ to 1¼-in. arbors and by $\frac{1}{16}$ in. for 1½ to 2-in. arbors. In the wide series the adjustment is $\frac{1}{32}$ in. for ⅞-in. arbors, ⅛ in. for 1¼-in. arbors and $\frac{1}{16}$ in. for 1½ to 2-in. arbors.

In each case the collar is divided in .001-in. spacings that are sufficiently wide so settings can be made accurately to .00025 inch. Adjustment is by means of a spanner wrench supplied with the collars. One hardened and ground backing plate is supplied for the wide-series units.

▼ BREVITY—Identify by IEN - 1807 if you write the maker ▼

WATER TREATING . . Chemicals for wash water in paint spray booths

Source: DEARBORN CHEMICAL CO.
308-12 S. Michigan Ave., Chicago 4, Ill.

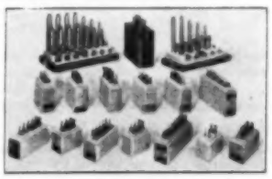
Engineering service is available free

New service has been developed by the company in connection with its chemicals for water treating in paint spray booths. This service places an engineer in the user's plant to test the paints being employed, the water used in the water-wash booths, and to recommend the correct formula to meet the conditions. The engineer will supervise start of the treatment and will train plant personnel. The company also maintains a laboratory in Chicago to make tests on new paints in a spray booth it has installed for this purpose.

▼ BREVITY—Identify by IEN - 1808 if you write the maker ▼

BORING . . Carbide cutters and extension shanks for jig boring

Source: BOKUM TOOL CO.
14773-77 Wildemere Ave., Detroit 21, Mich.



Sizes start at $\frac{1}{16}$ in. in hole diameter in a range of single-point carbide-cutter tool sets and shanks for jig-boring operation in which the company employs its solid carbide cutters previously described in IEN-8714-49. The sets are designed for given types of work so machine operators can have the units available quickly. The new line includes 16 combinations, all interchangeable to fit the shanks supplied. Each set includes a wood box. A new resharpening fixture is available with the tools.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 1809 if you write the maker ▼

You know how to operate this extinguisher JUST BY LOOKING AT IT!

It's a Randolph!

Anybody can get a Randolph into action FAST! No valves to turn, no nozzles to adjust; just point and press your thumb! Randolph's snowy CO_2 is non-damaging, evaporates without a trace. It's non-toxic, won't conduct electricity, deteriorate or freeze. Underwriters' approved.

A Complete Line of Extinguishers and Systems

Learn how Randolph gives your plant better *preventive* fire protection! Write for full facts.

RANDOLPH LABORATORIES, INC. 6 S. KINZIE STREET CHICAGO 11, ILLINOIS

▼ BREVITY—Identify by IEN - 1810 if you write the maker ▼

"BUILT-IN" FEATURE

SAVE OVER 50% FLOOR SPACE THE HAMMOND WAY

Hammond of KALAMAZOO

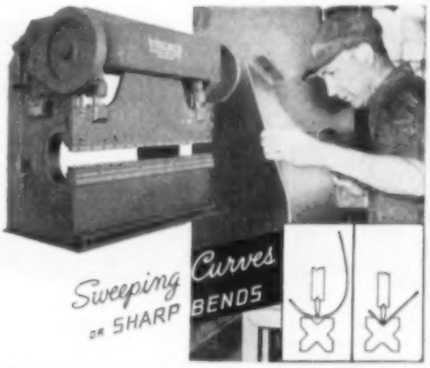
NO-DUST GRINDER

- Requires only 6½ square feet.
- Protects employees' health.
- Protects nearby machine tools against excessive wear from dust and grit.

A self-contained Grinder and Dust Collector for 10", 12" and 14" wheels. Write for Bulletin No. 104.

Hammond Machinery Builders
1687 DOUGLAS AVENUE • KALAMAZOO 54, MICHIGAN

▼ BREVITY—Identify by IEN - 1811 if you write the maker ▼



Sweeping curves or sharp bends are easily made on Steelweld Presses with standard 4-way bending dies, simply by adjusting the ram stroke. Blanking, drawing, corrugating and punching are also readily performed. A complete line of Steelwelds in capacities to 750 tons is available for plate to 20'0" long.

STEELWELD BENDING PRESSES CATALOG No. 2010

Send for free copy of catalog No. 2010.

THE CLEVELAND CRANE & ENGINEERING CO.
4233 East 281st St., Wickliffe, O.

STEELWELD PRESSES

▼ BREVITY—Identify by IEN - 1812 if you write the maker ▼

HANSEN TACKER for 1001 uses

CHAIR seat covers—with a saving of 4¢ per seat—with neater, faster work—are being tacked with the Hansen Model T-J Tacker.

Leo L. Woodard Sons Co., Owosso, Mich., use this modern method. They find the Tacker does a more efficient job. It provides neater seat covers, held securely in place.

Submit your tacking and fastening problems to Hansen, with sketch, sample and details.

Request Booklet

HANSEN

A.L. HANSEN MFG. CO.
5051 RAVENSWOOD AVE., CHICAGO 40, ILL.

BREVITY—Identify by IEN - 1813 if you write the maker

One of these 3 Methods Can Cut Your Production Costs

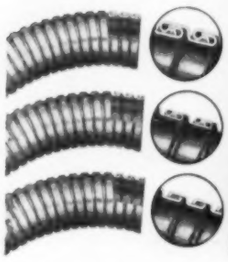
You'll get no "pat answer" from Remington Rand to problems of production control. Because . . . we choose from *many* methods, machines, systems to fit your individual needs. Each of the booklets shown, for instance, describes a method which today is doing a successful job for many plants, in reducing scrap loss, controlling inventories, efficiently scheduling machine time. Let us send you one—or all 3 booklets, so you can decide which method is best for you. Cut out this advertisement, check your choices, and mail it to Management Controls Library, Room 1672, 315 Fourth Ave., New York 10.

☐ KD 341A—on Sched-U-Graph for Production
☐ KD 367—on Kardex Visible for Production
☐ TM 596—on Punched-Card Methods for Production

Remington Rand Inc.

Remington Rand The First Name in Business Systems

BREVITY—Identify by IEN - 1814 if you write the maker



Strong! Durable! Flexible!

UNIVERSAL METAL HOSE

Simplify your installation and multiply efficiency of operation under extremes of pressure, temperature and vibration with UNIVERSAL Flexible Metal Hose. Each type satisfies to the highest degree requirements for hard, rough service and resistance to corrosion. The new UNIVERSAL Catalog U-101 gives details on hose types, sizes, applications and shows how UNIVERSAL Flexible Metal Hose can meet your needs exactly and help you cut cost. *Ask for your copy.*

ALL TYPES
Exhaust • Suction
Blower Hose • Conduits
Pressure Hose Fittings

ALL CONSTRUCTIONS
Seamless Flexible Hose
Interlocked High-Pressure Hose
Interlocked Exhaust and Blower Tubing
Square-Locked Low-Pressure Tubing

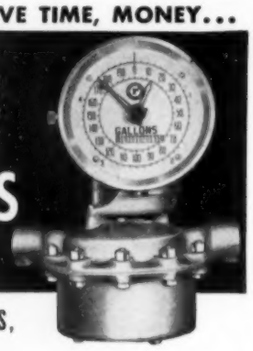
RECOMMENDATIONS on your present hose conveyance problem submitted without obligation. Send us your specifications TODAY.

UNIVERSAL METAL HOSE CO.
2131 S. KEDZIE AVENUE CHICAGO 23, ILLINOIS

BREVITY—Identify by IEN - 1815 if you write the maker

YOU CAN SAVE TIME, MONEY...

WITH **EMPIRE** *Industrial* **METERS**



BLEND, PROCESS, BATCH...

with Meter Surety!

Want to cut production costs, speed output? Then invest in Empire meters. You'll get *exact* measurement. And you'll get it quick. You can meter practically any liquid with an Empire. They cost little, last for years and save money every day. Automatic shut-off controls are available on some models. Write for bulletin.

Dept. Q
ROCKWELL MANUFACTURING CO.
Pittsburgh 8, Pa.

NEW LITERATURE—Continued

"Condensed reviews for busy readers"

LIGHTING . . "Cargolite" ball-suspended incandescent fixture with screen guard; catalog data on single units to 1,000 watts and on clusters. Bulletin 129-51. 2 pages. Steber Mfg. Co., 2702 Roosevelt Road, Broadview, Ill. **IEN-0190**

LUBRICATING . . Grease for ball and roller bearings; selection and properties chart on 25 types intended specifically for these bearings. "Lubriko", 4 pages. Master Lubricants Co., Jackson & Meadow Sts., Philadelphia 48, Pa. **IEN-0191**

METAL SPRAYING . . Process for protecting metal against heat oxidation, using the company's metal-spray equipment; picture examples. "Metcolizing", 4 pages. Metallizing Engineering Co., 38-16 30th St., Long Island City 1, N. Y. **IEN-0192**

METALS . . Laminated and solid precious metals; illustrated types, forms available, application suggestions, also information on electrical contacts. "Metals", 4 pages. D. E. Makepeace Co., 50 Dunham St., Attleboro, Mass. **IEN-0193**

METERS . . Electrical instruments with spot-of-light pointer; general construction description, illustrated available types. Leaflet, "Model 18A22", 2 pages. Cole Instrument Co., 1318-22 S. Grand Ave., Los Angeles 15, Calif. **IEN-0194**

METERS . . Recording electric units for millivolts, microvolts and micro-micro-amperes; illustrated details. Bulletin, "Recording Instruments", 4 pages. Millivac Instrument Corp., Box 3027-A, New Haven, Conn. **IEN-0195**

MICROSCOPES . . Unit with 32X magnification for toolmaker use; illustrated measuring setups along with a general review of features. Bulletin, "Model 1", 4 pages. Boeckeler Instrument Co., 29-33 E. Rillito St., Tucson, Ariz. **IEN-0196**

MIXING . . Fixed-mounting propeller-type units; catalog information including standard sizes, also location suggestions, horsepower table. Bulletin 600, 16 pages. Eastern Industries, Inc., 294-98 Elm St., New Haven 6, Conn. **IEN-0197**

MIXING . . Conical blender for dry materials and powders; operating principle, details on standard models, illustrated applications. Catalog 500, 12 pages. Patterson Foundry & Machine Co., 51 St. George St., East Liverpool, Ohio. **IEN-0198**

MOTORS . . Synchronous type, 20 hp. and up, 450 rpm. and less; illustrated construction details, typical application examples. Bulletin 44-200, 4 pages. Electric Products Co., 1723-27 Clarkstone Road, Cleveland 12, Ohio. **IEN-0199**

PIPE . . Made of plastic in sizes to 6 in.; properties, size table, strength data, examples of use. Three pocket folders, "Carlon E", "Carlon EF", "Carlon T", 4 pages each. Carlon Products Corp., 10231 Meech Ave., Cleveland 5, Ohio. **IEN-0200**

PLASTICS . . "Geon" polyvinyl materials for packaging applications; two-page properties chart on six water dispersions. Packaging Bulletin, 4 pages. B. F. Goodrich Chemical Co., 322-26 Rose Bldg., Cleveland 15, Ohio. **IEN-0201**

PROCESSING . . Jacketed kettle with its own sealed Dowtherm supply arranged for gas or electric heat; standard models, construction details. Bulletin PK-1, 4 pages. Groen Mfg. Co., 4537 W. Armitage Ave., Chicago 39, Ill. **IEN-0202**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1816 if you write the maker

BRADY QUIK-LABEL PIPE MARKERS

FAST... POSITIVE IDENTIFICATION

For a few cents per pipe, you can equip your entire plant with Brady QUIK-LABEL Pipe Markers. You can get a uniform system of pipe identification based on A.S.A. Standard A13. Names of materials printed in large black letters on correct A.S.A. background colors — no hand stenciling, painting, or hard to remember codes. Anyone who can read can tell at a glance the pipe contents and direction of flow. Over 235 different markers and direction arrows in stock. Specials made to order.

Brady QUIK-LABELS stick without moistening—applied in a jiffy, Silicone Plastic treated to resist dirt, grime, moisture—for indoor or outdoor service.

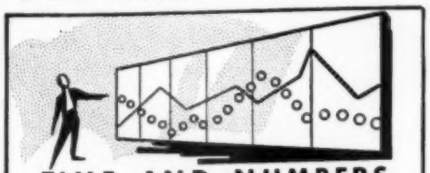
Brady Pipe Markers leave no room for doubt . . . or TRAGEDY.

WRITE FOR Free SAMPLES AND USEFUL CATALOG

DISTRIBUTORS IN OVER 125 PRINCIPAL CITIES

MANUFACTURERS OF SELF-STICKING PRODUCTS
W. H. BRADY COMPANY
1001 E. SPRING STREET • CHIPPEWA FALLS, WIS.

BREVITY—Identify by IEN - 1817 if you write the maker



TIME AND NUMBERS

Do you need a permanent record of specific times and numbers that apply to your laboratory or production work? Streeter-Amet has the instrument which will accurately and speedily record either numbers or time or both at the same time on paper tape for easy readability.

The counter operates by any means capable of supplying a switch closure or an electrical impulse. Counts may be indexed by time or number printed alongside the count.

For high speed counting of a predetermined number of completed articles, the Streeter-Amet Predetermined Counter automatically counts and then shuts off or controls associated machinery when the predetermined number is reached. An outstanding timesaver when packing a given number of small articles in a carton or bottle and measuring lengths of wire or sheets in a bundle.

Tell us your specific outstanding problem. We know we can help you economically.

Write for illustrated circular SC 12.

FOUNDED 1888
SCALES • WEIGHT RECORDERS • HI-SPEED COUNTERS
STREETER - AMET COMPANY
4101 N. RAVENSWOOD AVE. CHICAGO 13, ILL.

BREVITY—Identify by IEN - 1818 if you write the maker

WHY GUESS THE TEMPERATURE
. . . when you can see it!

Just sight it . . . and press the button!

THE NEW PYRO RADIATION PYROMETER

Tells spot temperature instantly

—in heat-treating furnaces, kilns, forgings and fire boxes. No thermocouples, lead wires or accessories needed! Temperature is indicated on direct-reading dial at a press of the button. Any operator can use it. In two double-ranges for all plant and laboratory needs. *Write for FREE Catalog No. 100.*

PYRO OPTICAL PYROMETER

Accurate temperatures at a glance!

Any operator can quickly determine temperatures on minute spots, fast-moving objects and smallest streams. Completely self-contained. No calibration charts or accessories needed. An accurate, direct reading Pyrometer that pays for itself by helping prevent spoilage. Weighs 3 lbs. Available in 5 temperature ranges (1400° F to 7500° F.). Ask for *free* Catalog No. 80.

THE PYROMETER INSTRUMENT COMPANY
New Plant and Laboratory
Bergenfield 21, N. J.

BREVITY—Identify by IEN - 1819 if you write the maker

ANY WAY YOU LOOK AT IT... the SAF-I-SPEC excells!

UNITED STATES SAFETY SERVICE CO.
Kansas City 6, Missouri • Branches in Principal Industrial Cities

BREVITY—Identify by IEN - 1820 if you write the maker

How to save money in RELINING OLD FURNACES

IT'S EASY to cut down on furnace relining costs if you use B&W Insulating Firebrick. B&W IFB can be cut with ordinary woodworking tools—are easy to handle and fit into place. This alone saves you valuable dollars in production time and labor costs.

B&W IFB save on fuel, too. They have the highest insulating value of any refractory in their class and because of their light weight reach operating temperature quickly, reducing total cycle time, increasing production time available.

WRITE today for full information on B&W Insulating Firebrick. Ask for Bulletin R-2-H. R-379

THE BABCOCK & WILCOX CO.
85 LIBERTY STREET, NEW YORK 6, N. Y.
WORKS: AUGUSTA, GEORGIA

BREVITY—Identify by IEN - 1821 if you write the maker

HERE THEY ARE:

Sturdy Instruments for Circuit Checking

Now's the time to make sure you're well supplied with test and service equipment! For fast delivery of these and related instruments, contact your Weston Representative—or write Weston Electrical Instrument Corporation, 603 Frelinghuysen Avenue, Newark 5, New Jersey . . . manufacturers of Weston and Tagliabue instruments.

Model 633 A-C Clamp Volt-Ammeter measures voltage and current without breaking the circuit. Insulated against 750 volts, tested at 2,500 volts. Five current ranges: 10/25/100/250/1,000 amperes. Three voltage ranges: 175/350/700 volts. Takes 2" dia. conductors.

Model 697 Volt-Ohm-Milliammeter combines a-c and d-c voltage, direct current, and resistance ranges for general test work. Self-contained battery. Sensitivity 1,000 ohms per volt. Companion portable ohmmeters and volt-ohmmeters also available.

Model 785 Industrial Circuit Tester is particularly designed for checking electronic control and power equipment. Seven d-c voltage ranges: .1 to 1000 (20,000Ω/V) . . . Six a-c voltage ranges: 5 to 750 (1000Ω/V) . . . Six d-c current ranges: 50 microamperes to 10 amperes . . . Four a-c current ranges: ½ to 10 amperes . . . Five resistance ranges: 3,000 ohms to 30 megohms . . . All ranges are full scale . . . A-c & d-c current ranges may be extended with external transformer or shunts.

WESTON *Instruments*

BREVITY—Identify by IEN - 1823 if you write the maker

GERMICIDE . . Liquid material is vaporized to treat atmosphere

Source: IRON CITY CHEMICAL CO.
51 Industrial St., Valencia, Pa.

Triethylene glycol together with a vaporizing unit known as the Glycolator is available for installation in various departments of an industrial plant as well as in the offices. It treats the atmosphere to prevent colds and other respiratory troubles. The vaporizer is electrically heated, has thermostat control. The vapor is circulated by an enclosed fan.

Three sizes include a portable unit measuring about 12 by 12 by 12 inches with capacity to treat 50,000 cubic feet continuously, a furnace model designed to install in a warm air outlet with capacity to 20,000 cu. ft; and a water-injection unit to apply in circulating-air installations to serve as much as a million cubic feet of air per hour. The portable assembly includes a quart container to hold about a month's supply of the liquid which is known under the trade name of Glycosol.

BREVITY—Identify by IEN - 1824 if you write the maker

CAPACITOR . . Electrolytic unit for starting duty in an ac. motor

Source: CORNELL-DUBILIER ELECTRIC CORP.
1000 Hamilton Blvd., South Plainfield, N. J.

• Two can apply in parallel

Designed to fit in the end frame of an electric motor, this new Type-ETB capacitor is assembled in a cylindrical aluminum housing that is covered with insulation for an overall size of about 1¼ by 3 inches. Five ratings are minimum at 64-72 mfd., maximum at 124 to 138 mfd. on 110-volt ac. The ratings are based on duty involving a maximum of 60 starts per hour of 1-sec. duration for each.

BREVITY—Identify by IEN - 1825 if you write the maker

ROCK DRILLING . . Carbide drills particularly for use in concrete

Source: TILDEN TOOL CO.
1993-97 N. Fair Oaks Ave., Pasadena 3, Calif.

Three drills, in sizes from 3/16 to 3/8-in., in the company's centerless design, previously described in IEN-7828-50, and three ranging from ½ to ¾-in. in the Kore type, previously described IEN-243-49, make up a new kit under the trade name Konkrete Kore Drills. The six units are contained in a plastic case with a protective flap and fabric tie strings.

The solid units in the three small sizes carry single-point carbide bits on their ends. The three in the larger sizes mount carbide rings, are hollow in their bodies and have side outlets for the drilled-out material and the core.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 60

BREVITY—Identify by IEN - 1826 if you write the maker

TIPS by the dozen on a sure thing!

Send for this free booklet of latest information on Resistance Welding.

SPOT WELDING TIPS

Resistance Welding knows this symbol. In shops small and large, it means dependability in Tips for sound, clean welds—efficient cooling—speedy welding—long tip life—less down time—welding at a saving!

WW Tips are made of alloys of the correct physical and electrical properties, and they are precision-machined, water-tight and electrically tight fitting.

Replaceable tips, both straight and offset, WW leak-proof holders, seam welding wheels, electrodes, dies and special alloys are available in standard sizes which you will find in the WW Catalog "Standard Replaceable Welding Tips—Standard Water-Cooled Holders." Weiger-Weed & Company, Division of Fansteel Metallurgical Corporation, 11644 Cloverdale Avenue, Detroit 4, Michigan.

WEIGER-WEED

E2801-D

Resistance Welding ELECTRODES
DIES • TIPS • WHEELS • HOLDERS

BREVITY—Identify by IEN - 1827 if you write the maker

There's always room for a ROTO-CLONE

Modern Dust Control Equipment Designed to Fit the Space and the Job

• This two wheel grinding stand, although placed in a crowded center-of-plant location, is serviced by a wall mounted Type D Roto-Clone. Dust-laden air is removed at the hoods, conveyed to the Roto-Clone where the dust is separated and delivered into the hopper and the air is passed through a final aftercleaner and recirculated to the workroom. A complete, compact operation utilizing unused wall space and designed for disposal of collected dust at floor level. Bulletin 270-A describes this as well as the complete line of Roto-Clone Dust Control Equipment. Write for it today.

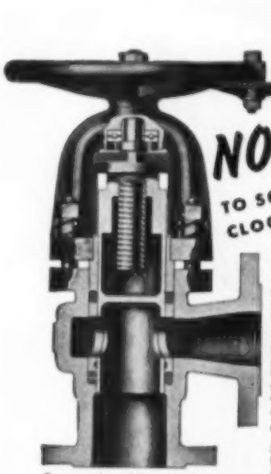
AMERICAN AIR FILTER CO., INC.
335 Central Ave., Louisville 8, Ky.

AAF

In Canada: Darling Bros., Ltd., Montreal, P. Q.

ROTO-CLONE DUST CONTROL

BREVITY—Identify by IEN - 1828 if you write the maker



NO SEAT!

TO SCORE . . . WEAR . . . CLOG . . . AND LEAK

The Yarway Seatless Blow-Off Valves eliminate the commonest source of trouble and expense with ordinary blow-off valve operations.

The famous seatless principle first introduced nearly 40 years ago, has been constantly improved and adapted to meet modern service requirements.

There is a Yarway Blow-Off Valve for every pressure.

SEND FOR FREE BLOW-OFF VALVE BOOKLET. PLEASE STATE YOUR BOILER PRESSURES.

Cross section of Type "B" Seatless Angle Valve, Flanged.

YARNALL-WARING COMPANY
122 Mermaid Ave., Phila.18, Pa.

YARWAY BLOW-OFF VALVES

BREVITY—Identify by IEN - 1829 if you write the maker

YOU CUT COSTS 4 WAYS with "QUIK-LIFT" hoists

1. **"Quik-Lifts" Cost You Less** per year to own because they are better built, last longer . . . save on both maintenance and replacement.
2. **Save You Money By Saving Time.** "Quik-Lifts" eliminate time and effort wasted by workers operating hand hoists—cut idle machine time, speed production.
3. **Protect You from Loss or Damage.** Shoe type brake cannot slip or drop load. Fool-proof switch stops hoist when load hook reaches upper or lower limit.
4. **Exact Model for Your Job** assures top operating efficiency. "Quik-Lifts" are available in 17 sizes, 500 to 4000 lb.—lifting speeds 4 to 49 ft. per min.—hook or lug suspension—with or without trolley.

• *Write for illustrated folder P2B giving complete information*

COFFING HOIST Company
Danville, Illinois

HOIST-JACKS, SAFETY-PULL RATCHET LEVER HOISTS, SPUR-GEARED HOISTS, "MIGHTY MIDGET" PULLERS, LOAD BINDERS, TROLLEYS

BREVITY—Identify by IEN - 1830 if you write the maker

tangle-proof power line for moving machinery

APPLETON REELITE

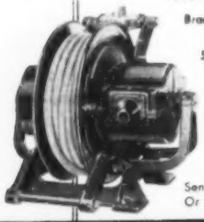
CONSTANT DUTY

You can cut cable costs, speed work and prevent delays and accidents when power for your mobile electrical machines is supplied through Appleton Constant Duty Reelites. These ruggedly built Reels automatically take up and pay out conductor cable—hold cable gently taut, preventing breaks, kinks, tangles.

APPLETON ELECTRIC COMPANY
1716 Wellington Ave. • Chicago 13, Ill.

Branches and Resident Representatives in all Principal Markets

Sold Through Electrical Wholesalers



Send for Bulletin No. 504.
Or see Sweet's File, page 2a/10a.

APPLETON
CONDUIT FITTINGS • LIGHTING EQUIPMENT • OUTLET AND SWITCH BOXES
EXPLOSION PROOF FIXTURES • REELITES

BREVITY—Identify by IEN - 1831 if you write the maker

TO: Purchasing Dept.
FROM: Production Dept.

Bill,
When you place orders with toolmakers, please insist on V-R Carbides.
Performance counts and V-R has it.
Fred

CEMENTED CARBIDES • TANTUNG-CAST ALLOYS
Our 21st year
V-R
VASCOLOY-RAMET CORPORATION

VASCOLOY-RAMET CORPORATION
WAUKEGAN, ILLINOIS

BREVITY—Identify by IEN - 1832 if you write the maker

are YOU bidding on DEFENSE ORDERS?

HANDY NEW FOLDER LISTS RUST PREVENTIVES CONFORMING TO FEDERAL SPECIFICATIONS

Packaging for Uncle Sam? Then you need this new NOX-RUST folder. You'll find latest details on rust preventives . . . information on what to use, how to use it . . . where to get it! Send for this free folder today. There's no obligation.

NOX-RUST CHEMICAL CORPORATION
"INDUSTRY'S RUST PREVENTION HEADQUARTERS"
2437 S. Halsted St. • Chicago 8, Illinois
BALTIMORE • SAN FRANCISCO • DETROIT • PHILADELPHIA

NEW LITERATURE—Continued

"Note the special 'O' numbers"

PROJECTING . . Roll-up screens for motion and slide pictures; sizes, models, stands, operators, notes on composition of the screen surface. Pocket Folder M-101, 10 pages. Radiant Mfg. Corp., 2625-29 W. Roosevelt Rd., Chicago 8, Ill. **IEN-0203**

PROTECTING . . Safety belts in leather or webbing; data summaries on a line for specific industries, reflector belts, accessories. Bulletin CF-26, 4 pages. Mine Safety Appliance Co., 21 Braddock Ave., Pittsburgh 8, Pa. **IEN-0204**

PUMPS . . Pneumatic ejector for waste lines; operating schematic accompanied by a description and data on performance, ratings. Bulletin S-50, 12 pages. Condenser Service & Eng. Co., River & Newark Sts., Hoboken, N. J. **IEN-0205**

PUMPS . . Gear and centrifugal units for coolants; specifications on 1/25 to ½-hp. pumps alone and with tanks, selection chart by operation or machine. Catalog 15250, 6 pages. Graymills Corp., 2004-8 Ridge Ave., Evanston, Ill. **IEN-0206**

REFRACTORIES . . Stopper heads for ladles employed in handling molten steel; typical illustrated shapes, properties. Bulletin S-750, 4 pages. Electro Refractories & Alloys Corp., 342-46 Delaware Ave., Buffalo 2, N. Y. **IEN-0207**

REFRACTORIES . . Suspended-arch refractory construction for furnaces; "double-hung" details on the individual refractory blocks test data. Bulletin 950, 4 pages. Geo. P. Reintjes Co., 2515-21 Jefferson, Kansas City 6, Mo. **IEN-0208**

RESEARCH . . Consulting service and laboratory; review of personnel, facilities, scope of the service and fields in which it applies. "Research Facilities", 20 pages. Foster D. Snell, Inc., 29 W. 15th St., 9th Floor, New York 11, N. Y. **IEN-0209**

RUBBER PRODUCTS . . For printing service; grades, properties, application suggestions to cover a range of uses, also data on adhesives. Catalog Section 9810, 4 pages. B. F. Goodrich Co., 448-52 S. Main St., Akron 11, Ohio. **IEN-0210**

SEPARATING . . Water-cooled unit to remove water, oil, dirt from compressed air; sectional view accompanied by details on operation. Bulletin, "Condensifilter", 4 pages. Hankison Corp., 1503 Beaver Ave., Pittsburgh 33, Pa. **IEN-0211**

SEPARATING . . Drum-type magnetic separators; specifications and dimensions on 12 to 24-in. units, notes on typical applications. Catalog 350, 4 pages. Magnetic Engineering & Mfg. Co., Erie R. R. & Van Houten, Clifton, N. J. **IEN-0212**

SWITCHGEAR . . Outdoor and indoor types for power and distribution circuits; illustrated review of general features, dimensions. Bulletin 18-B-6185A, 20 pages. Allis-Chalmers Mfg. Co., 909 S. 70th St., Milwaukee 14, Wis. **IEN-0213**

TESTING . . Instruments for mechanics, optics, electronics, designed and built to specification; typical examples in a number of fields. Folder 41850, 4 pages. Beckman & Whitley, 929 San Carlos Ave., San Carlos, Calif. **IEN-0214**

TESTING . . Series-T refrigerating equipment for testing, storage, processing at temperatures to minus 150 deg. F.; specifications table on 10 available models. Bulletin T-1150, 4 pages. Bowser, Inc., 51 Thomas St., Terryville, Conn. **IEN-0215**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

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Has Hundreds of Structural Uses in Modern Plants

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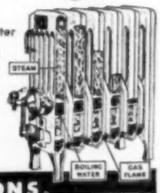

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Directs Light Exactly Where Needed as Easily as Pointing Your Finger

Designed Especially for Machine Tools, and Work on Assembly and Inspection Benches

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Overall length 32¾". Three instantly adjustable joints. Flat oblong base for machine screw mounting.

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There's good reason for our friend's admiring glances. When Wilson Tube Cleaners go to work, they quickly remove scale and other deposits from tubes of boilers, heat exchangers, stills, evaporators . . . leave them spic-and-span, ready for efficient service. Wilson Tube Cleaners do a "custom" job, save down-time, are more economical. • **WRITE FOR BULLETIN 47A**

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Cable: "TUBECLEAN," New York

TW.780 **WILSON**

WILSON TUBE CLEANERS
WILSON-DUDGEON TUBE EXPANDERS

BREVITY—Identify by IEN - 1840 If you write the maker

TRUCK ATTACHMENT . . Forks, stripper apply on company's power lift trucks

Source: CLARK EQUIPMENT CO. Battle Creek 49, Mich.

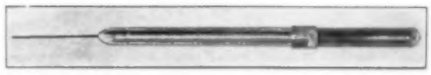
New design of the Pul-Pac fork truck attachment, to handle unit loads without the use of conventional pallets, employs a pantograph-type linkage in place of the long piston rods in the design previously described IEN-5992-48. The construction permits shortening the previous hydraulic stroke and prevents severe bending stresses in the pistons. Side forces, formerly exerted on the pistons, are now absorbed by the pantograph. No part of the mechanism lies back of the truck uprights.

There is 54 in. of usable length on the plate-type forks to remove a load from a pallet or directly from a truck by hydraulic action. Forks lower to lie flat on the floor, as shown in the illustration, to pick up or deposit a load.

BREVITY—Identify by IEN - 1841 If you write the maker

TACHOMETER . . Pencil type instrument, adjustable reed and indicating scale

Source: VERDELL INSTRUMENT SALES CO. P. O. Box 212-A, Burbank, Calif.



New Vibra-Tak is placed in contact with any part of a machine that is in operation to employ vibration in the machine as a means to measure the operating speeds. A sliding collar on the instrument is adjusted to obtain maximum vibrating swing in the instrument reed. The scale is then read in revolutions per minute. Range is to 15,000 rpm.

BREVITY—Identify by IEN - 1842 If you write the maker

HEATING . . Dielectric equipment to heat pre-made wrapped sandwiches

Source: ELECTRONIC SANDWICH MASTER INC. 24-28 N. Raymond Ave., Pasadena 1, Calif.

A sandwich that has been put together at a previous time and wrapped to keep it fresh is inserted in the slot in the front of this new dielectric heater. A timer switch is turned on the housing face. In about one minute the sandwich can be removed hot and ready to unwrap and eat.

The machine operates on 110-volt 60-cycle ac. It heats the sandwich without itself becoming hot since the heating action is entirely between electrodes by means of high-frequency energy within the sandwich. List price is $300.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1843 If you write the maker

Here's all you need to install most machines!

...when you use ISOMODE* PADS!

You can locate almost all machines anywhere in the plant when you provide for shock- and vibration-absorption with Isomode Pads. They do the job effectively — and at surprisingly low cost! Simply place required area of these resilient mountings between machine foot and floor.

Isomode Pads also reduce noise. They keep machines from "walking," even without hold-downs! They save on building maintenance.

Isomode Pads, molded of Neoprene, resist oil, water — last for years under all types of equipment, including punch presses, looms, compressors! Write for bulletin 405.

*Trade Mark Reg. U.S. Pat. Off.

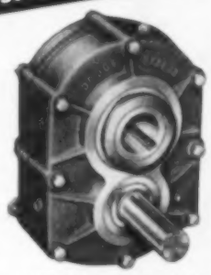
THE MB MANUFACTURING COMPANY, INC.
1064 State St., New Haven 11, Conn.

BREVITY—Identify by IEN - 1844 If you write the maker

NEW!

A SINGLE REDUCTION TORQUE-ARM SPEED REDUCER—

FOR SPEEDS 115 TO 330 R.P.M.



This new SINGLE Reduction Torque-Arm Speed Reducer provides the same big advantages in this range that its companion, the Dodge Double Reduction Torque-Arm, has brought to the field of lower speeds. No special engineering required. No foundation to provide. No flexible couplings or sliding base. No "lining-up" difficulties. Torque arm, fastened to floor or any fixed object, anchors reducer unit. Turnbuckle provides fast, accurate adjustment of belt tension.

Four sizes . . . all available from stock with stock product economy . . . with capacities up to 27 H.P. and developing output speeds from 115 to 330 r.p.m. Write us for Bulletin A602 with details, specifications, easy-to-use selection tables.

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FIRST IN POWER TRANSMISSION MACHINERY

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NOW! A wiping tissue 100% grit-free

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*T. M. REG. U. S. AND CAN. PAT. OFF.

Write for further information and name of the Kimwipes distributor nearest you.

Kimberly-Clark Corporation, Neenah, Wisconsin

BREVITY—Identify by IEN - 1846 If you write the maker

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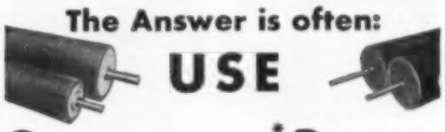

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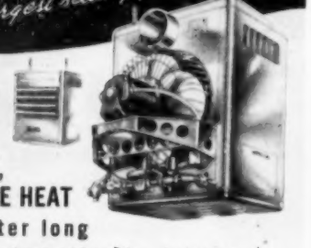
world's largest selling gas unit heater



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Contrast central heating plants with Reznor unit heaters . . . no pipes, no heat waste through travel to point of use. No overheating of large or small areas. Heat is manufactured at point of use. We have a dealer near you.

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NEW LITERATURE—Continued

"What it is and what's in it"

TESTING . . Dye-penetrant materials for non-destructive testing and flaw detection in metals; illustrated steps, examples, list prices. Bulletin 500, 4 pages. Dy-Check Co., Div., 1513-17 E. Broadway, Hawthorne, Calif. **IEN-0216**

TESTING . . Type L-254 quartz spectrograph; detail description, design features, optical system including a diagram, accessories available. Bulletin 151-50, 8 pages. Gaertner Scientific Corp., 1203 Wrightwood Ave., Chicago 14, Ill. **IEN-0217**

TESTING . . Contract service for component performance testing; facilities and equipment list to outline the scope of the service. Booklet, 24 pages. Inland Testing Laboratories, 2743-47 Janssen Ave., Chicago 14, Ill. **IEN-0218**

TESTING . . Type DR-543 unit to inspect ferrous parts for flaws; general description on the magnetic-particle method employed, notes on portable unit. Folder 144, 4 pages. Magnaflux Corp., 5914 Northwest Highway, Chicago 31, Ill. **IEN-0219**

TESTING . . Universal machines for tension, compression, flexure, shear, transverse; data on two table models of 15,000 and 30,000 lb. rating. Folder 501, 4 pages. National Forge & Ordnance Co., 49 Front St., Irvine, Warren Co., Pa. **IEN-0220**

TESTING . . Table-model electron microscope; captioned illustrations and description of features, performance examples. Bulletin 2-J-6851, 12 pages. Radio Corp. of America, 1941 Front & Cooper Sts., Camden 2, N. J. **IEN-0221**

TESTING . . Machine to test hardness of sheet material and to stamp it if satisfactory; description, operating instructions. "Automatic Certifying Hardness Tester", 4 pages. Topflight Tool Co., 114-18 E. Market St., York, Pa. **IEN-0222**

TESTING . . Dielectric moisture meter for products such as seeds, plastics, soap; operating description, condensed specifications. Bulletin 1263-A, 4 pages. Weston Electrical Instrument Corp., 612-16 Frelinghuysen, Newark 5, N. J. **IEN-0223**

THERMOCOUPLES . . Standard units in base and noble metals; data on types, assemblies, lead wires, protection tubes, available accessories. Catalog 3, 12 pages. Arklay S. Richards Co., 27 Winchester St., Newton Highlands 61, Mass. **IEN-0224**

THERMOSTATS . . Type-C bimetal strip thermostats for temperature to 600 deg. F.; operating description, data on styles and available ratings. Leaflet F-2008, 2 pages. Stevens Mfg. Co., 67-71 S. Walnut St., Mansfield, Ohio. **IEN-0225**

TIMING . . "Clipper" consecutive-spacing time recorder; illustrated details on card clipping action and up-the-card registration. Bulletin CTR-2, 4 pages. Cincinnati Time Recorder Co., 1731 Central Ave., Cincinnati 14, Ohio. **IEN-0226**

TRACTOR ATTACHMENTS . . "Lodover" 1-yd. overhead and front-end power shovel for International Harvester tractor; typical illustrated uses. Bulletin LO-200, 8 pages. Service Supply Corp., Erie Ave. & 20th, Philadelphia 32, Pa. **IEN-0227**

TRUCKS . . Power hand truck with motor in its single drive wheel; details on battery and gasoline-engine models, dimensional drawings, motor mountings. Folder, "Who Said . .", 16 pages. Clark Equipment Co., Battle Creek 49, Mich. **IEN-0228**

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A NEWS ADVERTISEMENT BY LABELON TAPE CO., INC.

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FILES...SAWS...STONES

ILLINOIS DIE FILING MACHINE

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MANUFACTURERS OF METAL CUTTING TOOLS AND SHAKEPROOF PRODUCTS

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Bulletin 8265 . . for air, water, light oil, refrigerants and other liquids and gases up to 250 psi; for steam up to 175 psi; Factory Mutual and Underwriters' approved; ⅜" pipe size; ⅛" to ¼" port size.

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HYDRAULIC PIPING, TUBING!

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High Speed CHAIN HOIST

63% Less Weight. Of Alcoa Aluminum Alloy, the 1 ton capacity weighs only 35 lbs. Carry it anywhere with ease. Designed to stand the "gaff" of maintenance work. **42% Fewer Parts:** Long service life. **96% Efficient:** Lifts loads rapidly with easier pull on the chain. ***Herc-Alloy Flexible Load Chain:*** America's first welded alloy steel chain. ***Sealed-in Lifetime Lubrication:*** No attention required. ***Low Cost:*** No more than heavy old style chain hoists. Capacities: ¼ to 10 tons.

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OF USES and SPECIFICATIONS

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Industrial Pneumatics
ADD THESE **6** SELLING POINTS TO YOUR PRODUCT

SAVE
• TIME • LABOR
• FLOORS

REDUCE
• BREAKAGE
• MAINTENANCE
• COSTS

Available in assemblies of Tires, Tubes and Wheels. Size O. D. 8" to 27"—200 to 4000 lbs. cap. for low or high speeds.

Rigid **CASTER FORKS** *Swivel*

Wide-base caster forks engineered to carry heavier loads without adding dead weight to equipment. Available in identical pairs in a wide range of sizes.

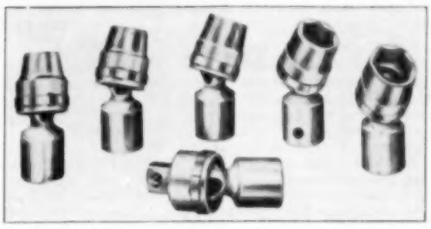
More AIR VOLUME • *More* STABILITY • *More* LOAD CAPACITY
DELIVERS *Long Mileage* IN HI-SPEED SERVICE

SEND FOR CATALOG... DEPT. 3
THE GENERAL TIRE & RUBBER CO. AKRON, OHIO

BREVITY—Identify by IEN - 1857 if you write the maker

WRENCH . . Universal sockets, ball type, ½ to ¾ in., for power drive

Source: PROTO TOOLS
2207-11 Santa Fe Ave., Los Angeles 54, Calif.



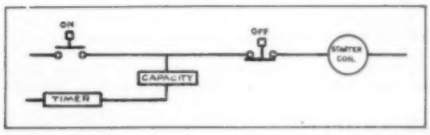
Five new sockets and a universal joint employing a ball-type coupling have been added to the company's line of socket wrenches. The new units are intended particularly for use with power drives. They are characterized by their smooth operation and the fact that they will not back off the work. A friction spring holds the nose end at desired placement position and working angle.

Each unit in the line uses the same size of driver end, spring, pin and pin retainer ring to minimize the requirements for parts in stock. Each has minimum breakover angle of 35 to 37 degrees. Material is steel with plated finish. The ball portion of the socket is self-cleaning. The drive in takes a ½-in. square, can be fitted with an adapter for ⅝ or 3-in. drive. The sockets have 6 point openings in sizes measuring ½, $\frac{9}{16}$, ⅝, $\frac{11}{16}$ and ¾ inch.

BREVITY—Identify by IEN - 1858 if you write the maker

MOTOR CONTROL . . Prevents stop on 70 per cent momentary voltage drop

Source: ELECTRIC CONTROLLER & MFG. CO.
2704 E. 79th St., Cleveland 4, Ohio



UVP designates new circuit that has been developed by the company in connection with its motor control equipment which acts to hold a circuit contactor closed magnetically in the event of momentary loss of power so motor stoppages from this cause will be minimized. The circuit permits the starter to remain locked in down to a low voltage and also permits the motor to re-accelerate if the voltage recovers in 2 seconds or less.

When voltage reaches about 25 per cent of normal value, causing the magnetic-starter armature to open, the coil current decreases rather than rises when the armature seal is broken. This causes the contacts to break clean and eliminates the danger of welding in the low-voltage conditions.

The new development changes only the pushbutton control circuit to introduce capacity into the coil circuit after the contactor in the starter equipment closes. A small timing relay keeps the pushbutton operating-coil circuit active for the 2-second interval to permit the motor to restart.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1859 if you write the maker

Powermaster
Fully Automatic
STEAM GENERATORS
AND HOT WATER BOILER UNITS

15 to 500 HP.—15 to 200 p.s.i.—for light oil, heavy oil, gas and gas/oil firing.

SIMPLIFIED INSTALLATION
SAVES PLANT SPACE
REDUCES FUEL COSTS
HOSPITAL-CLEAN OPERATION
AUTOMATIC SAFETY PLUS
EASY BOILER MAINTENANCE
SAVES MAN-HOURS DAILY

Write For Bulletin

ORR & SEMBOWER, INC.
860 Morgantown Rd., Reading, Pa. Established 1885

BREVITY—Identify by IEN - 1860 if you write the maker

Saves $40,000 a year
with General Electric Capacitors

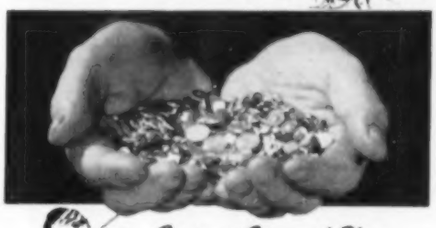
A West Coast chemical plant reports that 3780-kvar of G-E capacitors, engineered into the plant's power distribution system, are saving $40,000 on power costs alone. That's a return of better than 50% a year on the investment!

Have you checked your power costs recently? If you have a power factor or demand clause in your power contract you, too, may be able to effect considerable savings. Your authorized G-E agent or distributor, or nearest G-E sales office, can help you check. Or write for GEA-5167—"A Way to Cut Power Costs." *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC
477-200

BREVITY—Identify by IEN - 1861 if you write the maker

"Button, Button, Who's Got the Button?"



Contact General Plate
for Laminated Buttons, Large or Small

Whether it's a handful or a carload, *contact* General Plate for your electrical contact button requirements. General Plate Laminated Buttons give you all the advantages of solid silver performance at a fraction of the cost of solid silver. They are especially suited for brazing and spot welding, thereby cutting installation costs. General Plate Laminated contact buttons are available with flat or dome tops . . . in raw stock for your own fabrication or as finished fabricated contact assemblies ready for installation into your products. Write, specifying your problems for cost-cutting recommendations.

OTHER GENERAL PLATE PRODUCTS INCLUDE—
Truflex Thermostat Metals . . . Precious to base metal laminations . . . Base metal laminations . . . Alcuplate (copper and aluminum) . . . Silver solders . . . Laminated contacts, buttons, rivets . . . Platinum-fabrication-refining . . . Age-hardening Manganese Alloy 720.

GENERAL PLATE
Division of Metals & Controls Corporation
702 FOREST STREET, ATTLEBORO, MASS.

BREVITY—Identify by IEN - 1862 if you write the maker

RUBEROID RAPID ASPHALT PAINT
A LASTING PROTECTION FOR YOUR EQUIPMENT

Whenever wear, weather or chemical attack are dangers to electric or industrial equipment, use Ruberoid Rapid Asphalt Paint for economical, lasting protection. Highly resistant to most acid and alkali conditions, this asphalt paint is composed of quality grade bitumens.

Almost any surface can have Rapid Asphalt Paint protection. Metal, wood, masonry or fabroid—this tough waterproof paint adheres readily and permanently. Easily applied by brush or spray, it quickly dries to a lacquer-like hardness. Ruberoid Rapid Asphalt Paint is truly a "*must*" for your equipment!

- High resistance to acid and alkali—protects against wear and exposure.
- Heat resistant—stands temperatures up to 212° F.
- Highly penetrant — preserves wood.
- Excellent electrical insulation qualities.
- Prevents corrosion, rust, rot, and deterioration.
- Tasteless and odorless when dry.

The RUBEROID Co.

EXECUTIVE OFFICES: 500 Fifth Avenue, New York 18, N. Y.

BREVITY—Identify by IEN - 1863 If you write the maker

Hard To Find ... but we have them!

Lathe Cut Parts · Recessed Bumpers · Mushroom Bumpers · Plug-Type Bumpers · Grommets · Suction Cups · Chair Tips · Tack Screw Bumpers

WORLD'S LARGEST ASSORTMENT OF STANDARD MOULDS FOR SMALL MECHANICAL RUBBER PARTS

SAVE MONEY! SEE US BEFORE YOU DESIGN IT!
Write, wire or phone your needs today! Chances are we have just the mould you want! Lowest possible prices — prompt, efficient service. Request new 44 page catalog, today.

LAVELLE Rubber Company
1811 W. Hubbard St., Chicago 22, Ill.

BREVITY—Identify by IEN - 1864 If you write the maker

Hills-McCanna offers Over 20,000 different assemblies for valving "hard-to-handle" fluids

32 Bonnets
14 Diaphram Materials
49 Body Materials

No matter how specialized your problem of valving corrosive and/or hazardous substances, slurries, viscous liquids, gases, fermentation products, materials subject to coagulation, foods or beverages, the chances are that Hills-McCanna can furnish the proper valve to meet your needs. Write, today, for full information and descriptive literature, HILLS-McCANNA CO., 2437 W. Nelson Street, Chicago 18, Illinois.

HILLS-McCANNA
Saunders patent diaphragm valves
Proportioning Pumps
Force-Feed Lubricators • Magnesium Alloy Castings

BREVITY—Identify by IEN - 1865 If you write the maker

MORE HOLES
PER HOUR — PER DOLLAR

Increase production of any standard drilling machine by adding a Lign-o-matic, the only drill turret with the patented, self-centering principle that guarantees sustained accuracy equal to the drilling machine itself.

FOR ALL CONSECUTIVE DRILL PRESS OPERATIONS

PROVED PRODUCTION INCREASE — Turret indexes faster than tools can be changed or work moved to another spindle. A single Lign-o-matic will release 5 drilling machines for other work and still show increased production and reduced costs on original job.

VERSATILITY — Fits any standard drilling machine without altering the machine. Handles operations such as drilling, reaming, counterboring, and tapping (on reversible spindle machines), up to ½" diameter in any material.

PRECISION — Patented, self-centering tapered drive (A) automatically locks turret spindle (B) into exact alignment with drilling machine spindle (C) for sustained accuracy.

GUARANTEE — May be returned in 10 days for any reason for full refund of purchase price. Two-year guarantee against defective parts.

PRICE — Model D, 6 spindles with No. 2 Jacobs male taper $235.00
Chucks extra at established prices.

DELIVERY — Currently, 2 weeks.

☐ Please rush ..... Lign-o-matic turrets for
(drill press make) ..... (size) .....
(quill dia.) ..... (spindle taper) .....
My name .....
Title .....
☐ Please send literature on Lign-o-matic turret.
(Attach coupon to company letterhead)

HOWE & FANT, INC.
524 FLAXHILL RD., SO. NORWALK, CONN.

NEW LITERATURE — Concluded

"Send us your literature for review"

VALVES . . Small general-purpose solenoid valves; description on packless design, cut-away view, flow data on water, oil, air. Catalog 6V-A-1950, 4 pages. Automatic Switch Co., 389-93 Lakeside Ave., Orange, N. J. **IEN-0229**

VALVES . . Pressure-relief and pressure-reducing units for water and air, also hot-water control valves; sectional views, specifications. Bulletin 299, 8 pages. A. W. Cash Valve Mfg. Corp., 660-12 E. Wabash, Decatur 60, Ill. **IEN-0230**

VALVES . . Gate, globe, angle, check valves in iron, bronze, steel and stainless steel; condensed descriptions, list prices, discs. List Price Catalog, 48 pages. Jenkins Bros., 100 Park Ave., 30th Floor, New York 13, N. Y. **IEN-0231**

VALVES . . Corrosion-resistant units, gate, globe and swing check designs, 150 and 600 lb.; construction points, notes on selection of materials. Bulletin SS-100, 18 pages. Pacific Valves Inc., 3203 Walnut Ave., Long Beach 7, Calif. **IEN-0232**

VALVES . . Pressure regulator and pump governor valve; description, connection drawing to show its correct point of application, list prices. Bulletin 102, 2 pages. C. E. Squires Co., 18504 Syracuse Ave., Cleveland 10, Ohio. **IEN-0233**

VENTILATING . . Power roof ventilator that includes an axial-flow fan, 1/20 to 7½ hp.; sizes, ratings, drawings, dimensions. Bulletin, "Air-Max Type C," 4 pages. Gallaher Co., 4104-8 Dodge St., Omaha 3, Neb. **IEN-0234**

VENTILATING . . "Verti-Stack" fan-equipped ventilator, 16 to 60 in. in diameter in 8 sizes; performance data, construction, mounting. Bulletin VS-2, 6 pages. Oliver & McClellan, Inc., 30 Church St., 9th Fl., New York 7, N. Y. **IEN-0235**

VISES . . "Slide-Set" machinist vise with 4-in. jaw and 6-in. opening; cut-away and description of quick-adjust operation, operating sequence. Bulletin A-601, 4 pages. Dodge Mfg. Corp., 500 S. William St., Mishawaka, Ind. **IEN-0236**

WATER TREATING . . Ion-exchange demineralizing equipment; schematic flow diagram of typical units, application details, use on boiler feed water. Bulletin 98, 4 pages. Belco Industrial Equip., 42 Iowa Ave., Paterson 3, N. J. **IEN-0237**

WATER TREATING . . Softening and clarifying chemical; general information on properties, notes on use for boiler feed water. "Sodium Aluminate," 12 pages. Monsanto Chemical Co., 1948 Chemical Lane, Boston 49, Mass. **IEN-0283**

WELDING . . Hand torches for gas welding and cutting; construction details, attachments, tips, pressure charts, application suggestions. Catalog 2, 36 pages. Air Reduction Sales Co., 1656 Lincoln Bldg., New York 17, N. Y. **IEN-0239**

WELDING . . Alloys and fluxes for welding, brazing, soldering, tinning; selection table by type of metal, specifications. Pocket Catalog, 32 pages. All-State Welding Alloys Co., 271-5 Ferris Ave., White Plains, N. Y. **IEN-0240**

WELDING . . Arc-welding equipment; condensed data on ac. transformer-type, dc. motor-generator type, electrodes, tools. Pocket Bulletin W-74-1, 20 pages. Harnischfeger Corp., 4402 W. National Ave., Milwaukee 14, Wis. **IEN-0241**

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1866 If you write the maker

A NEWS ADVERTISEMENT BY HONAN-CRANE CORP.

SUMP CLEANER... "One-man" mobile unit removes dirty oils, coolants

Source: HONAN-CRANE CORPORATION
subsidiary of HOUDAILLE-HERSHEY CORPORATION
802 Wabash Avenue, Lebanon, Indiana

Houdaille Sump Cleaner provides quick, simple removal of dirty cutting oils or coolants containing chips, abrasives or grindings from machine tool sumps. Unit equally suitable for cleaning quenching and settling tanks or draining liquid and chemical vats. Cleaning of individual machine accomplished in 10 minutes or less.

Three-way valve permits unit to be used either for suction to remove dirty coolant from sumps, or for pressure to dispense clean coolant to sumps from storage or purification equipment. Mercoid liquid level control, actuated by float within tank, stops pump when tank is full, preventing overflow and spillage. Drain valve provides for salvaging usable oils and coolants.

Fully enclosed vacuum pump and ½ hp. repulsion induction motor operated by single manual switch. Unit equipped with 10-ft. heavy duty extension cord and plug; 10-ft., 1¼" neoprene suction hose with 30" nozzle. Large 28" diameter, roller bearing wheels and caster auxiliaries assure easy movement over any kind of flooring. Proper balance on primary axle makes dumping easy.

One man can easily operate unit after 5 minutes of instruction. Two sizes available: 80 to 125 gallon capacities.

BREVITY—Identify by IEN - 1867 If you write the maker

A 2 CIRCUIT THERMOSTAT FOR A THOUSAND USES —

HI-HEAT TO LOW HEAT
FOR AGITATOR AND HEATER
FOR BLOWER AND HEATER
ROBERTSHAW MODEL F-1 THERMOSTAT (Single Pole Double Throw)

When two heating elements are used, high heat element is automatically cut in when thermostat calls for heat. When set temperature is reached, main contacts are automatically broken and low, or holding temperature element is cut in to function until drop in temperature again calls for heat. *Write for catalog.*

In Home and Industry EVERYTHING'S UNDER CONTROL
Robertshaw THERMOSTAT DIVISION
ROBERTSHAW-FULTON CONTROLS COMPANY
YOUNGWOOD, PENNSYLVANIA

BREVITY—Identify by IEN - 1868 If you write the maker

MODERN PROBLEMS get modern answers with DUREZ

Short cut between production runs

Multihead drills were this custom molder's solution when radio and clock cabinet hole locations shifted from model to model. To get high production rate on Durez phenolic plastic cabinets, the molder uses semi-automatic compression presses and electronic preheating equipment. Durez was selected for its excellent electrical properties and heat resistance, comes from mold with handsome mottle finish.

STORED ENGINES STAY FREE FROM RUST

Dehydrator plugs for aircraft engines required close tolerances and torque strength to exclude moisture, plus resistance to heat used in renewing activity of silica gel. An expensive special-purpose Durez phenolic seemed necessary. Instead, the custom molder suggested a minor design change, making it feasible to use a general-purpose Durez at substantial cost saving.

KNOWN AS THE MOST VERSATILE of all plastic materials, the phenolics lend themselves to an extraordinarily wide range of design and production ideas. Durez has specialized from the beginning in the phenolics, and now has available more than three hundred different molding compounds, as well as a wide variety of phenolic resins. Let our field technicians help you. And to keep informed on industry's use of phenolics, write for our monthly "Durez Plastics News." Durez Plastics & Chemicals, Inc., 1702 Walck Road, North Tonawanda, N. Y.

DUREZ — Phenolic Plastics that fit the job

PHENOLIC RESINS — MOLDING COMPOUNDS · INDUSTRIAL RESINS · PROTECTIVE COATING RESINS

▼ BREVITY—Identify by IEN - 1870 If you write the maker ▼

send for this sample . . . it may open your eyes!

A simple request will bring you a sample of one of the most amazing materials ever developed by science. It is Tufflex, the fiber felt, and it's cutting production costs—adding quality—in many industries today. Tufflex is downy soft—amazingly resilient. It cushions. It withstands heavy impact blows. It insulates. It deadens sound. It is easily fabricated to any size or shape. Tufflex is available in a variety of densities and thicknesses—and in moisture resistant and fire retardant forms. Learn more about the many new uses for Tufflex—send today for your sample and complete information. Wood Conversion Company, Dept. 126-21, First National Bank Bldg., St. Paul 1, Minnesota.

TUFFLEX* A Product of Weyerhaeuser

*REG. U. S. PAT. OFF.

▼ BREVITY—Identify by IEN - 1871 If you write the maker ▼

Some of the Products Our Machines Now are Finishing

- Screw drivers, chisels, pliers, saws, wrenches
- Fine silver—knives, forks, spoons
- Cigarette cases and lighters, compacts, mirror and brush backs
- Surgical instruments
- Fan blades, flat iron sole plates, photogravure stock

We have the answer TO YOUR SURFACE FINISHING PROBLEM!

For flash removal to mirror finish . . . a Clair Surface Finishing Machine may be the economical solution to your small product **finishing problems.** From the seven extremely versatile basic designs, a "custom-made" machine may be developed for your particular application. *Write for technical data.*

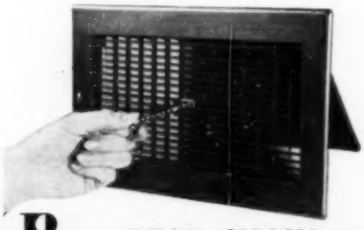
CLAIR MANUFACTURING CO., INC.
Specialized Machine Equipment For Glazing and Polishing Operations
OLEAN, N. Y.

▼ BREVITY—Identify by IEN - 1872 If you write the maker ▼

No "Or Equal" for PULLS

BEAD CHAIN has long been the preferred pull chain among designers. For light duty on items like lamp sockets and fans, or heavy load pulls on large dampers, ventilators, venetian blinds, etc., the superiorities of Bead Chain are many:—

It is strong yet light and attractive. Free-running, even over small sheaves . . . can't kink, bind or jam because every bead is a swivel. Highly adaptable . . . 5 bead sizes, various metals and finishes, and *the widest choice* of attachments for coupling, splicing, hooking, doubling, etc. Submit your "pull problem"—Bead Chain engineers will solve it.



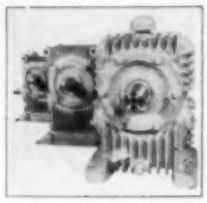
The BEAD CHAIN Mfg. Co.
TRADE MARK
59 Mountain Grove St., Bridgeport 5, Conn.

Manufacturers of: BEAD CHAIN— the kinkless chain of a thousand uses, for fishing tackle, novelty, plumbing, electrical, jewelry and industrial products; **MULTI-SWAGE**— the most economical method of producing small tubular metal parts for electronic and mechanical applications.

▼ BREVITY—Identify by IEN - 1873 If you write the maker ▼

DRIVE . . Speed reducer, Cone worm and gear design, three sizes

Source: MICHIGAN TOOL CO.
7169-73 E. McNichols Road, Detroit 12, Mich.



Center distance between input and output shafts measures 2, 2½ and 3 in. in three recently improved designs of the company's Cone-Drive speed reducers. All are designed to operate with the pinion under or over the gear, or with the gear shaft vertical by changing the supporting bracket and the breather cap to the required positions. The 2 and 2½ in. sizes are available in ratios from 5 to 50 to 1 and in pinion speeds from 100 to 1,750 to 1. The largest 3-in. unit has ratios from 5 to 60 to 1 with pinion speed at 100 to 1,750 to 1.

The pinion is made of high-carbon chrome-molybdenum-nickel steel. The gear is chill-cast copper-tin-nickel bronze. Bearings are anti-friction. The housing is cast iron.

▼ BREVITY—Identify by IEN - 1874 If you write the maker ▼

MARKING . . Soap base crayon for washoff mark on glass, metal, wood

Source: CELCO CORP.
1629-33 Tenth St., Santa Monica, Calif.

Crayoff is a new marking crayon available in eight colors to make identifying marks that can be washed from a surface when they are no longer required. The crayon measures 4½ in. in length, ½ in. in diameter. The colors are sharp and clear. Packaging is in solid or assorted colors in boxes of 12 listing at about $1.50.

▼ BREVITY—Identify by IEN - 1875 If you write the maker ▼

FURNITURE . . Folding chair designed to seat temporary assemblies

Source: AMERICAN SEATING CO.
903 Broadway, N. W., Grand Rapids 2, Mich.

Folding Fifties is a new line of Y-type tubular-steel chairs featuring a wide shaped seat and formed back panel with folding design in which fingers cannot be pinched. All sharp edges have been removed and metal parts are finished in baked enamel. No. 53 is all steel. No. 54 has a lacquered plywood seat. No. 56 is upholstered in leatherette. All have replaceable rubber shoes.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

▼ BREVITY—Identify by IEN - 1876 If you write the maker ▼

NEW 6 INCH BASSICK "SUPER 99" CARRIES UP TO 1000 LBS. PER CASTER

Super *for medium-heavy duty!*

Bassick's easy-swiveling "Super 99" is *super*-strong, takes the *roughest* use . . . power-operated assembly line dollies and fixtures, etc.

There's *strength* in every feature . . . forged steel wheel, ¼ in. thick steel top plate, extra-heavy king pin, full-floating double ball race construction, fully-hardened bearing surfaces, etc.

Put it to work *now* to reduce the "Reducible 30%" (materials-handling...about 30% of total cost . . . one of today's few *reducible* expenses). Write for descriptive leaflet.

THE BASSICK COMPANY, Bridgeport 2, Conn. Division of Stewart-Warner Corp. *In Canada:* Bassick Division, Stewart-Warner-Alemite Corp., Ltd., Belleville, Ont.

BASSICK MAKING MORE KINDS OF CASTERS . . . MAKING CASTERS DO MORE

▼ BREVITY—Identify by IEN - 1877 If you write the maker ▼

if you ship in cans...

then you'll be interested in our new booklet on the Rex Roto-Brush Can Cleaner and Drier. This unique new machine is proving to be a remarkable cost cutter in a wide variety of canning operations. Here are some of the profitable advantages you get by installing a Rex Roto-Brush:

1. Improved Product Appearance
2. Simplified Labeling
3. Important Space Savings
4. Speeds up to 300 cans per minute

For all the details, just mail the coupon below.

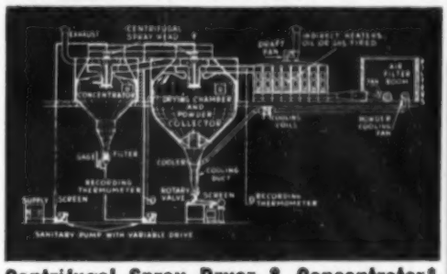
REX CHAIN BELT COMPANY — **FOOD PROCESSING EQUIPMENT**

CHAIN BELT COMPANY
1675 W. Bruce Street, Milwaukee 4, Wis.
Please send me a copy of Bulletin 49-40.

NAME.....
COMPANY.....DEPT.....
STREET.....
CITY.....STATE.....

▼ BREVITY—Identify by IEN - 1878 If you write the maker ▼

IMPROVED DEHYDRATING SYSTEM



Centrifugal Spray Dryer & Concentrator*

For dehydrating
- Chemicals
- Pharmaceuticals
- Blood or Blood Plasma
- Milk Products
- Eggs
- Vegetables
- Coffee and many other Products

A complete spray drying plant employing a unique centrifugal type spray head. No high-pressure pump is used, and due to the design of the spray head, emulsions as well as solutions can be dried. No clogging or wearing of nozzles is caused by the suspended solids. The powder is collected and cooled in the drying chamber.

Concentrator Available Separately

Concentrator can be operated as separate unit for reducing liquid products to almost any desired degree of concentration, almost instantaneously, retaining natural flavors and vitamins.

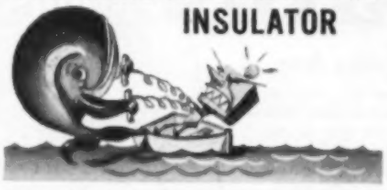
WRITE FOR FREE BOOKLET

Attractive bulletin illustrates and describes spray drying plants; explains operation in detail. Shows plan views; application photos. Send for your FREE copy today. 651

DRYING & CONCENTRATING CO., 332 S. Michigan Ave., Chicago, Ill.

▼ BREVITY—Identify by IEN - 1879 If you write the maker ▼

SYNTHANE is a Whale of an INSULATOR



Synthane laminated plastics have a combination of superior electrical qualities that may make them just the materials you've been seeking to make your product better.

One advantage is excellent electrical insulating ability. Others are high dielectric strength, low dielectric constant and low power factor. Together with Synthane's light weight, ease of machining and good mechanical and chemical characteristics, they make Synthane a valuable material for many applications in almost every industry.

If your present materials are in any way unsatisfactory and your quality standards are high it may pay you well to find out more about Synthane. For your copy of the Synthane catalog, clip and mail the coupon today.

TECHNICAL PLASTICS
SHEETS • RODS • TUBES
FABRICATED PARTS

SYNTHANE
MOLDED-LAMINATED
MOLDED-MACERATED

SYNTHANE CORPORATION
South River Road, Oaks, Pa.
Please send me a copy of the complete Synthane catalog.
Name.....
Firm.....
Address.....
City.....State.....

BREVITY—Identify by IEN - 1880 if you write the maker

you can get in FAFNIR Ball Bearings this small

• For extremely small shafts in instruments, home appliances, cameras and projectors, fractional h.p. motors, Fafnir makes several series of extra small ball bearings . . . in metric bore sizes down to 4 mm and in inch sizes down to 1/8". Available with standard, special or super-precision tolerances. Three constructions . . . filling slot, non-filling or spring type retainers. Can be fitted with grease shields, felt seals, Mechani-Seals or Plya-Seals. If you want top performance on a small shaft — Fafnir has the answer. Write for new Instrument Bearing Catalog. The Fafnir Bearing Company, New Britain, Conn.

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

BREVITY—Identify by IEN - 1881 if you write the maker

GRAMIX® parts can meet tolerances of .0005

Gramix parts, die-pressed of powdered metal mixtures to tolerances as close as .0005, fit practically every design need. Gramix parts eliminate costly machining time and are oil impregnated for self-lubrication. Gramix can help improve the mechanical performance of your products, save time and money. Write today for full facts.

THE UNITED STATES GRAPHITE COMPANY
Division of The Wickes Corporation
SAGINAW, MICHIGAN

BREVITY—Identify by IEN - 1882 if you write the maker

STOP watches

Yours free...

New 1951 catalog of internationally famous Clebar stop watches. Most complete line of stop watches in America . . . for every timing purpose.

In use by the foremost industrial firms, laboratories, colleges and athletic competitions.

MAIL COUPON TODAY!

Clebar Stop Watches meet and exceed the rigid specifications of the National Bureau of Standards!

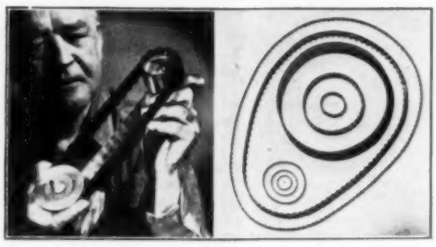
CLEBAR Watch Agency

Clebar Watch Agency
Dept. N 551 Fifth Avenue • New York 17, N. Y.
Please rush me a FREE copy of the new 1951 catalog of the internationally known Clebar Stop Watches.
Name .....
Address .....
City ..... State .....

BREVITY—Identify by IEN - 1883 if you write the maker

DRIVE . . Rubber toothed belt rides without slip on toothed pulleys

Source: UNITED STATES RUBBER CO.
1230-32 Sixth Ave., New York 20, N. Y.



New information has been assembled and the company announces start of regular production of its positive-drive rubber-fabric belt, previously described IEN-12476-47 as the Gilmer Timing Belt. The body of the belt is reinforced rubber-fabric with integral rubber teeth on the inner face and imbedded steel cables to provide stretch-proof tensile strength. The belt applies on pulleys with faces that have been grooved to present teeth that will match those in the belt. It is made in a range of sizes by the company's L. H. Gilmer Division.

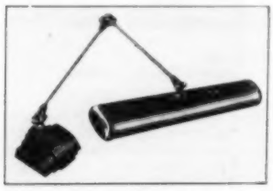
Typical applications include synchronizing drives in color-television equipment, positive operation of commercial sewing machines, floor polishers, sanders, saws, fan-belt drive on internal-combustion engines, main drive on portable chain saws, electric typewriters, screw machines, gasoline pumps.

Speeds can be maintained to 16,000 fpm. in noiseless operation in drives that can operate on fixed centers since no take-up adjustment is required. The belt itself is not subject to attack by oil and can be employed in speed ratios to 30 to 1 over pulleys as small as ½ in. in diameter for operation at 10,000 rpm. Current production is on specifically engineered applications with the company working toward establishment of a standardized line of stock drives.

BREVITY—Identify by IEN - 1884 if you write the maker

LIGHTING . . Fluorescent fixture flexibly mounted on supporting base

Source: ART SPECIALTY CO.
3255 W. Lake St., Chicago 24, Ill.



Flexo trade names new assembly of steel reflector housing, housing mounted switch, universally adjustable extension arm and base to mount on a table, bench, desk or wall. The housing measures 18½ in. in length, takes a No. T8 15-watt lamp for operation on 110-volt 60-cycle ac. The two parts of the extension arm are 36 in. in overall length. List price is $13.50.

Finishes in bronze. The housing is white enameled on its inside surface. Three models, in addition to the unit with the base shown in the illustration, include one particularly for drafting tables, one to assemble permanently with anchorage beneath a desk or table and one to mount on the floor.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1885 if you write the maker

The remarkable BAKER newly designed 100% FUNCTIONAL FORK TRUCK is now available for

• SIT-DOWN DRIVE!
• STAND-UP DRIVE!
• CAPACITIES OF 3000 TO 6000 POUNDS!

A year ago we introduced the new BAKER Type FT Fork Truck in 5000 and 4000 pound capacities. Because of its highly advanced, completely functional design, this truck more than lived up to our claim that it would do *more work per dollar invested than any other truck in its class.*

The unprecedented acceptance of this truck and the insistent demand from our customers for other types and sizes, have resulted in our expansion of the line to include *capacities up to 6000 pounds* in both *stand-up* and *sit-down-drive.*

Completely descriptive bulletins available. Ask for:

Bulletin 1884 for the FT (sit-down drive) 3000 to 4000 pounds.
Bulletin 1885 for the FT (sit-down drive) 6000 pounds.
Bulletin 1886 for the FC (stand-up drive) 3000 to 6000 pounds.

BAKER INDUSTRIAL TRUCK DIVISION *of The Baker-Raulang Company*
1226 West 80th Street, Cleveland 2, Ohio

Baker INDUSTRIAL TRUCKS

BREVITY—Identify by IEN - 1886 if you write the maker

Have you a FOG NOZZLE problem?

"G" Series Fire Hose Nozzles (for ¾", 1", 1½" hose lines)

Try the new BETE line of patented non-clogging Fog, Mist and Spray nozzles for industrial, agricultural and fire control applications. Unique design permits extremely wide range of spray patterns, gives more uniform and finer spray droplets. Made in flow rates from 2 gallons per hour to 500 gallons per minute. Complete line of wide angle, hollow cone, full cone and flat spray nozzles.

Write for Catalogues and Prices.

"B" Series Spiral Fog (for 2 to 70 g.p.m.)

"P" Series (for 1/6 to 1 g.p.m.)

"F" Series Flat Spray (for 1/20 to 10 g.p.m.)

"A" Series Spiral Fog (for 2 to 10 g.p.m.)

"Multipin" Spiral (for 1 to 3 g.p.m.)

BETE FOG NOZZLE, INC.,
83 Pierce St., Greenfield, Mass.

BREVITY—Identify by IEN - 1887 if you write the maker

BREAK the BULK Material BOTTLENECK IN YOUR PLANT WITH Handy, Efficient TOTE* SYSTEM

The NEW Improved Method now revolutionizing BULK MATERIALS Handling in many industries

Modernizing methods for handling materials in bulk has become the watchword of progressive industries from coast to coast. For the first time in generations, TOTE SYSTEM* provides a practical, efficient, economical answer to most, if not all, your bulk materials handling, shipping and storage problems.

Briefly, TOTE is a system for handling such bulk materials as flour, sugar, cement, carbon black, paint pigment, powdered milk, and other dry granular or powdered materials, in convenient, gleaming 74 cu. ft. aluminum containers known as "TOTE BINS*". Filling and discharging equipment together with the bins, comprise the TOTE System. Advantages gained: elimination of sources of contamination and deterioration; prevention of rodent and insect infestation; stopping of container losses through breakage, spilling or sifting; elimination of disposable container expense; saving on damage claims, pilferage losses; retention of original quality of product. These are but a few of the important advantages you will enjoy once TOTE SYSTEM* goes to work for you.

Many industries throughout the nation are enthusiastic users of TOTE SYSTEM*. Let us send you their comments based on actual experience. Write at once for this and other detailed, illustrated information.

*Both TOTE and TOTE System Reg. U. S. Pat. Off.

TOTE SYSTEM, Inc., Beatrice, Nebr., Dept. 760B
Without obligation, send me information on TOTE
Name .....
Firm .....
Address .....
City ..... State .....

BREVITY—Identify by IEN - 1889 If you write the maker

Here's the profitable answer to many filtering problems

Illustrated is portable unit; stationary units also available

NUGENT *Packaged* Filtering Units

For large garages, machine shops, engine rooms, electroplating plants, etc., complete, compact Nugent Filtering Units will often pay for themselves in oil savings in a very short time. Consisting of a motor, pump and filter assembly these units can be hooked up to clean oils and liquids in all types of containers. Filtering can be done either by the batch or by continuous circulation. Capacities from 0.8 gpm to 22.5 gpm. Portable or stationary models are available. Write for full details and descriptive literature.

Wm. W. Nugent & Co., Inc.
418 N. Hermitage Ave. CHICAGO, 22, ILLINOIS
Est. 1897

Oil Filters, Oiling and Filtering Systems, Telescopic Oilers, Oiling Devices, Sight Feed Valves, Flow Indicators . . . Representatives in Principal Cities

BREVITY—Identify by IEN - 1890 If you write the maker

TOOL CRIB CONTROL

New illustrated bulletin presents step-by-step procedure used profitably in hundreds of plants.

How it works to—

- Record each employee's tools or gages, preventing theft and loss;
- Recover idle tools;
- Cut crib inventories;
- Reduce tool breakage;
- Locate each tool, loaned or in crib;
- Eliminate delays, saving man and machine time;
- Stop arguments and otherwise speed service;
- With no increase in crib personnel—

All described in Folder A-510IEN

Complete control of your tools will save head-aches in the months ahead.

Write for your copy today to:
The McCaskey Register Company, Alliance, Ohio

McCASKEY INDUSTRIAL CONTROLS
PRODUCTION • TOOLS • INVENTORY • COSTS • MAINTENANCE

BREVITY—Identify by IEN - 1891 If you write the maker

What is the *AR RATING of Your Product?

New Taber **ABRASER** MODEL 140

tests wear resistance of fabrics, protective coatings, plating, plastics, rubber, etc.
Proven rotary rub-wear action of dual abrading wheels, simulates wear under actual service conditions.

PRECISION TESTING OF STIFFNESS WITH THE TABER V-5 GAUGE

Taber Stiffness Gauge provides a quick, scientific method of measuring the FLEXUAL STRENGTH of thin sheet metal, wire, plastic sheet and paper.

Write for new literature

TABER INSTRUMENT CORP.
107 Goundry Street
North Tonawanda, N. Y.

*Abrasion Resistance
TWO MODELS

BREVITY—Identify by IEN - 1892 If you write the maker

PHOTOGRAPHING . . Recording camera and equipment for protective uses

Source: AUTOMOTIVE LIABILITY REDUCTION ASS'N INC. 11 W. 42nd St., Room 701, New York 18, N. Y.

An Alrax camera, flash attachment, spare flash lamps, record forms, self-mailing container and operating instructions make up a new kit assembly of photographing equipment to record events such as motor-vehicle accidents, receiving platform unloading of goods damaged in transit, injuries to employees, plant accidents, any unusual occurrences in which a photographic record will constitute a protective measure.

Upon taking a picture the camera is placed in the mailing container and is sent to the company for developing, filing of the negative for record purposes, maintenance as required, reloading and return. The container in which the kit is supplied includes mounting brackets and screws to locate the equipment for immediate use. The company supplies 5 by 7-in. prints of each picture as quickly as the negative is developed.

BREVITY—Identify by IEN - 1893 If you write the maker

GAGE . . Pneumatic comparator unit reads over and under a set dimension

Source: FEDERAL PRODUCTS CORP. 1140 Eddy St., Providence 1, R. I.

Dimensionair is a new precision pneumatic gage mounting a measuring plug on its housing or on the end of an extension tube. It reads direct on a dial to .0015-in. over and under zero. Interchangeable plugs are supplied as specified, together with standard rings. Divisions on the dial face read .00005 inch. The gage operates on air pressure between 40 and 100 pounds. Readings are independent of normal pressure fluctuations.

Air issuing at the jets in the measuring plug enables it to be used in production work in the presence of oils and coolants. Plug clearance is sufficient so grit and dirt do not interfere with application. The plugs are chromium plated.

The gage housing measures 9 by 7⅝ by 8½ inches. Weight is 17¼ pounds. The action is characterized by quick movement of the indicator hand to the reading without final creeping movement. The jewel-bearing mechanism is cushioned at both ends of its travel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

BREVITY—Identify by IEN - 1894 If you write the maker

FOR LOW COST AND BIG RESULTS
Feed Your Presses With
LITTELL
STYLE "M" AUTOMATIC
ROLL FEED

FOR SPEED . . . With Style "M" automatic feeding your press can easily produce 9,000 stampings an hour at 200 strokes per minute, or 4,600 stampings an hour at 100 strokes per minute.

FOR VERSATILITY . . . Style "M" feeds left to right, right to left and front to back. Feed direction can be reversed by simply reversing clutch. Feed lengths per stroke are 0 to 4⅝" with standard gears and 0 to 8½" with compound gears.

FOR ADAPTABILITY . . . Style "M" is adaptable to any standard punch press. It feeds coil stock up to 8" wide and up to .035" thick (17 gauge).

FOR SAFETY . . . Style "M" automatic feeding keeps hands and fingers away from danger, prevents costly accidents.

FOR DURABILITY . . . Style "M" is built with hardened and ground feeding rolls and the other quality features that have made Littell Roll Feeds accurate and durable since 1918.

FOR ECONOMY . . . Style "M" brings you a big saving in price. It gives your presses the lowest insurance rate. It cuts your cost per stamping by multiplying press output.

WRITE FOR CATALOG

F. J. LITTELL MACHINE CO.
District Offices: Detroit, Cleveland
ROLL FEEDS • DIAL FEEDS • STRAIGHTENING MACHINES • REELS • AIR BLAST VALVES
4133 N. RAVENSWOOD AVE. • CHICAGO 13, ILL.

BREVITY—Identify by IEN - 1895 If you write the maker

Cut Clock Watching

...IN TIMING ANY PROCESS

Automatic INTERVAL TIMER
(TYPE T-48)

Let the T-48 give you to-the-second timing of process or laboratory operations. It frees operators for other work. And it's so easy to set up—simply plug in and use. Low in cost, too . . . $16.98 list.

Four different models—12-hour, 2-hour, 15-minute, and 120-second—offer a wide range of applications. And its expanded scale makes it easy to set, assures greater accuracy. Push-button start and automatic reset make repeat work a snap. Operates on 110-120 volt, 60 cycle AC; max. load, 1200 watts.

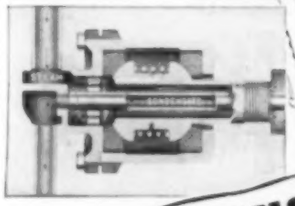
Many uses in laboratory, industry or home. See your nearest G-E representative.

Write for Bulletin. Ask for GEA-5108. Write Section 603-91, Apparatus Dept., *General Electric, Schenectady 5, N. Y.*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 1896 If you write the maker

Trail-Blazer . . .



JOHNSON *Rotary Pressure* **JOINTS**

As a brand new approach to an old problem, the Johnson Joint introduced a form of stuffing box without stuffing, and without any need for oiling or adjusting. Years of service in the textile and paper industries have proved it unmatched for the twin tasks of boosting efficiency and slashing maintenance. Now its unusual possibilities are being utilized on rubber mills, grain dryers, rolling mills and many similar machines. If you're looking for a better way to get steam or liquids in or out of rotating machine parts, get all the facts.

Sizes and special types for all needs; write for literature.

The Johnson Corporation
846 Wood St., Three Rivers, Mich.

BREVITY—Identify by IEN - 1897 If you write the maker

KOHLER

Precision Parts
Aircraft, Industrial, Automotive

KOHLER PLUG VALVE. *Forged Aluminum Body With Precision-Lapped Stainless Steel Plug.*

Kohler Precision Parts are used by manufacturers of Diesel engines, automobiles, trucks, tractors, jet engines, military, commercial and private aircraft, and for agricultural and industrial test equipment. With an organization experienced and skilled in precision workmanship, Kohler maintains full facilities for forging, casting, machining, finishing, assembling, and testing.

Kohler engineers will develop precision valves and fittings for volume production to meet special applications. Write for catalog and send your specifications or requirements.

Kohler Co., Kohler, Wisconsin. Established 1873.

KOHLER OF KOHLER
PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS
AIR-COOLED ENGINES • PRECISION PARTS

BREVITY—Identify by IEN - 1898 If you write the maker

HANNIFIN

Everything you want in **CYLINDERS**

Here's help for busy machine designers and plant operating engineers. You can save time and money right from the start by checking with Hannifin on all of your hydraulic and pneumatic cylinder requirements. *The Hannifin line is complete!*

Hannifin sets the standard for quality! Perfected, tested designs; finest quality construction. Test-proven packings! Finest seals! Proper finishes! Interchangeable parts! Cylinders "Tru-Bored" and honed; rods ground and polished. For complete information, see your local Hannifin representative, or write.

HANNIFIN CORPORATION
1107 S. Kilbourn Ave.
Chicago 24, Ill.

Helpful **BULLETINS**

Bulletin 110 (Left) "HANNIFIN HYDRAULIC CYLINDERS"

Bulletin 210 (Right) "HANNIFIN PNEUMATIC CYLINDERS"

BREVITY—Identify by IEN - 1899 If you write the maker

Heating Safety

Protects

YOUR Investment

Alnor Type 5200 Pyrotac excess temperature cut-off.

The Alnor Pyrotac excess temperature cut-off offers you low-cost, automatic protection against damage due to excessive temperatures . . . safeguards your investment in heating equipment and materials in process.

Simple in operation, the Pyrotac constantly indicates temperature of the heater equipment and stands ready to sound an alarm and/or shut down heater circuits at a pre-set maximum safe temperature. Available in scale ranges from 0°-600°F. to 0°-3000°F. and Centigrade equivalents.

An Alnor quality instrument, featuring laboratory precision and husky construction; yet the price is only . . .

$85.00 —*far lower than for ordinary instruments of this type.*

WRITE FOR BULLETIN
Illinois Testing Laboratories, Inc.
Room 517, 420 N. La Salle Street
Chicago 10, Illinois.

Alnor PRECISION INSTRUMENTS FOR EVERY INDUSTRY

BREVITY—Identify by IEN - 1900 If you write the maker

Want to know more about GAS ANALYSIS?

READ THIS NEW 8-PAGE ENGELHARD BULLETIN

Look at these typical data-packed pages

YOU WILL FIND a wealth of material on a wide range of gas analysis problems and their solutions in the new Engelhard 8-page illustrated bulletin. It explains how Engelhard equipment provides complete, sensitive, accurate analyses by the proven thermal conductivity method. The bulletin also contains a *valuable thermal conductivity table* that you will want to keep for handy reference. *Write for your free copy today. Ask for Bulletin 800A.*

Please send me FREE copy of Bulletin 800-A on Gas Analysis.
Name .....
Company .....
Address .....
City ..... State X1234

CHARLES ENGELHARD, INC.
850 PASSAIC AVENUE, EAST NEWARK, N. J.

BREVITY—Identify by IEN - 1901 If you write the maker

PROTECTING . . Metal frame goggles with metal or leather side shields

Source: AMERICAN OPTICAL CO.
12-16 Mechanic St., Southbridge, Mass.

Flat eyewires, tubing-covered temples brown in color, non-snagging assembly screws, engraved eyewire bar, design to permit lens replacement without removing the side shields, characterize these new goggles. Both are available with clear or Calobar, regular or 6-curve Super Armorplate lenses.

Series 7000 designates the metal assembly with wire side shields for ventilation as well as protection. Series 3081 adds a leather bridge guard, replaces metal side shields with soft leather.

BREVITY—Identify by IEN - 1902 If you write the maker

LAYOUT . . Experimental kit for three dimensional plant layout

Source: VISUAL PLANNING EQUIPMENT CO.
River Road & Pennsylvania Ave., Oakmont, Pa.

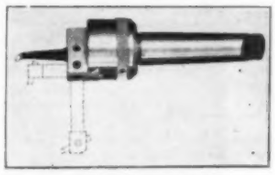
List price is $97.50

Machines, benches, trucks, conveyors, office and washroom equipment and a 12 by 18-in. lucite planning board with columns and layout tape make up a new experimental plant-layout kit on the scale of ¼ in. to one foot. The kit is designed to check the possibilities in a partial or complete specific plant layout before purchasing all of the materials.

BREVITY—Identify by IEN - 1903 If you write the maker

BORING . . Adjustable head for boring and facing, ⅜ to 20 inch

Source: MAXWELL CO.
391 Broadway, Bedford, Ohio



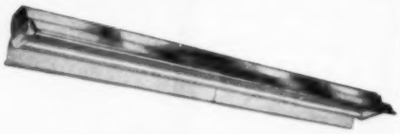
Three sizes in the company's recently improved design of adjustable boring heads previously described IEN-2716-49, take boring bars with shank diameter to ½, 1, and 1½ inches. The three cover an overall boring range between ⅝ and 20 inches. Boring bars and socket keys are supplied as standard equipment in each size.

The new design employs a round dove-tail slide to provide rigid support for the bar, a micrometer-type adjustment that can be set in increments of .0002 in., a scroll mechanism with modified square threads to minimize backlash, interchangeable shanks for application of the tool in jig boring, milling and straight boring operations.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1904 If you write the maker

Modern as tomorrow!



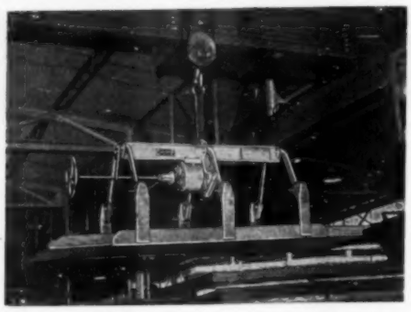
New Wheeler RLM "Industri-Line" Slimline Fixtures

1. High Output
2. Latest G. E. Turret Type Lampholders (depressable): for single-pin contact
3. Reflectors in Sections
4. Individual or Continuous Mounting
5. One-piece Top Channels: heavy gauge steel
6. For 2 or 3 T-12 Slimline Single-Pin Lamps: Instant starting

For complete information write Wheeler Reflector Co., 275 Congress Street, Boston 10, Massachusetts

Wheeler REFLECTOR COMPANY
Lighting Equipment Specialists Since 1881

BREVITY—Identify by IEN - 1905 If you write the maker



Save Time . . . Save Sheets

Handle loose or bundled sheets with one of these C-F Lifters and you save TIME and SHEETS, because C-F Lifters, under one man and control, can handle more sheets per load safer, faster and more economically. Tong action grips load tightly, yet design features like wide bearing surface give full protection to stock edges. End control of C-F Lifters permits closer stocking of piles—resulting in more efficient use of storage facilities. C-F Lifters are available in capacities from 2 to 60 tons or larger, in standard or semi-special designs.

WRITE FOR THE BULLETIN "C-F LIFTERS"

CULLEN-FRIESTEDT CO., CHICAGO 23, ILL.

CULLEN-FRIESTEDT CO., 1310 So. Kilbourn Ave., Chicago 23, Illinois

BREVITY—Identify by IEN - 1906 If you write the maker

SPARKLING ALCOA FOIL keeps it dry

When it's needed, this military replacement motor will be ready. Alcoa Aluminum Foil, laminated to other materials, keeps it dirt and moisture free, *ready at the drop of a hat.*

Today, shipment and exposed storage of defense equipment emphasize the remarkable, protective qualities of this sparkling, pure aluminum wrapping . . . qualities already familiar to many industries whose peacetime uses of Alcoa Foil have placed it high on the list of preferred packaging materials.

If you have a packaging problem consider the many advantages and possible applications of Alcoa Foil. While it is true that current supplies are limited by military needs, we will gladly send you the names of packaging experts, qualified to give you information on material availabilities, as well as capable assistance in your future planning.

Write to: ALUMINUM COMPANY OF AMERICA, 1766B Gulf Building, Pittsburgh 19, Pennsylvania.

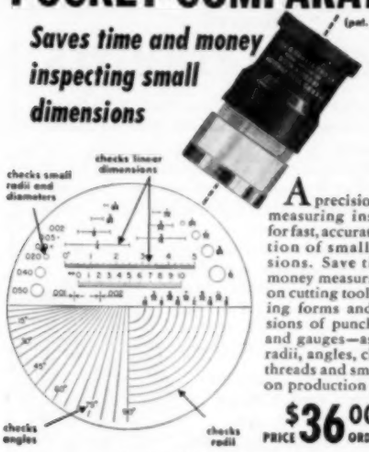
ALCOA ALUMINUM

BREVITY—Identify by IEN - 1908 if you write the maker

new POCKET COMPARATOR

(pat. applied for)

Saves time and money inspecting small dimensions



A precision optical measuring instrument for fast, accurate inspection of small dimensions. Save time and money measuring wear on cutting tools, checking forms and dimensions of punches, dies and gauges—as well as radii, angles, chamfers, threads and small holes on production parts.

PRICE $36.00 ORDER TODAY

a product of **BELL & HOWELL CO.** *distributed by*

Write for FREE descriptive folder

See Your National Tool Co. Representative or Local Jobber

NATIONAL TOOL CO.

11220 Madison Avenue Cleveland 2, Ohio

BREVITY—Identify by IEN - 1909 if you write the maker

All these products are being handled efficiently and at low cost

by YEOMANS PUMPS

Chemical Processing
brine
heavy chemicals
melted phosphorus
zinc compound

Food Processing
unstrained cane juice
sugar, bagasse
lima beans
mayonnaise
Packing house wastes
cannery wastes

Miscellaneous
foundry sand
pulp, paper products
plastics
grease
sludge
machine tool sludge
with cuttings

Having pump troubles?—or have you material that a good pump might handle faster and for less cost? Talk to Yeomans—about a pump or pneumatic ejector to meet your special needs—and to end troubles. Write us describing material to be handled. No obligation.

YEOMANS BROTHERS COMPANY
1467 NORTH DAYTON STREET CHICAGO 22, ILLINOIS

BREVITY—Identify by IEN - 1910 if you write the maker

STRONGER THAN GIBRALTAR

EMERITE FLOORING

The flooring that contains Natural Emery Stone (shown in the foreground) — the hardest mineral in the world, excepting the diamond only! Designed for industries which have despaired of ever finding an adequate flooring material. Permanent, economical, unbelievably strong! Investigate today!

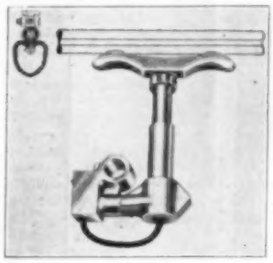
WRITE FOR INFORMATIVE LITERATURE TO SALES DEPT.

FLASH-STONE COMPANY, INC.
ERIE AND PULASKI AVES., PHILA. 40, PA.

BREVITY—Identify by IEN - 1911 if you write the maker

CONNECTOR . . Trolley shoe assembly bears up under insulated conductor

Source: CALABAR CORP.
8414-18 Otis St., South Gate, Calif.



Spring-loaded trolley shoe has been designed to ride up under a figure-eight conductor enclosed in the company's Con-L-Duit neoprene insulation sleeve. The assembly mounts on a round bar for perpendicular adjustment for positive contact at both ends of the shoe. The spring in the vertical shank provides for 1 in. of variation in vertical position of the trolley line.

A junction box is built in so field connection calls only for removal of a snap-on cover, insertion of the lead and tightening of a set screw. The shoe itself is heat-treated nickel-aluminum alloy. There is no possibility for castering action.

BREVITY—Identify by IEN - 1912 if you write the maker

INSULATING . . Cylindrical bushings of molded plastic for electronic uses

Source: AMERICAN MOLDED PRODUCTS CO.
1652 N. Honore St., Chicago 22, Ill.

Samples sent upon request

Nylon and Styron are now available in molded form for use as electrical insulators in electronic equipment. They feature low moisture absorption, shape retention, ease of assembly, freedom from rough edges. Dimensions can be held closely. Lengths range from 1/8 to 1 1/8 in. in 1/32-in. steps. Outside diameter is .187 in. and inside diameter is .126 inch. Other sizes can be specified.

BREVITY—Identify by IEN - 1913 if you write the maker

VALVE . . Corrosion resistant gate for 12 in. line, 150 lb. at 500 deg. F.

Source: PIONEER ALLOY PRODUCTS CO.
16637 Euclid Ave., Cleveland 12, Ohio

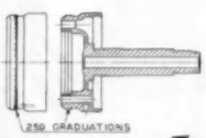
Stainless steel in Types 302, 304 and 316 or the company's Pioneer metal can be specified in this new flanged gate valve. The new 12-in. size shown in the illustration is outside stem and yoke design measuring 14 in. between faces. It is the largest in a line of corrosion-resistant valves starting at 1/2 in. as the smallest.

The stem is double Acme threaded for fast opening and closing. The valve construction conforms to MSS standards and the recently developed ASA standards. It is packed with Teflon rings. The bolts in gland and bonnet are stainless steel.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1914 if you write the maker

10 to 25 TIMES *Faster!!*

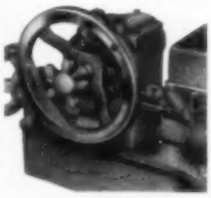


ABRASIVE GRADUATING MACHINE MODEL GC SAVES TIME and MONEY

Quickly pays for itself

Here's a typical case: It formerly took 45 mins. to graduate this 5¼" diam. handwheel. Using Abrasive Model GC, it takes only 1¾ mins. per piece. This machine paid for itself in *only 10½ hrs. of production time* on the job!

Model GC is the machine for your dial graduating problems. Cuts any number of graduations from 40 to 1,000 on handwheels, dials, etc. from 1½" to 20" diam. Fast, accurate, adaptable — available for prompt delivery. Send for complete details. ABRASIVE MACHINE TOOL CO., 18 DUNELLEN ROAD, EAST PROVIDENCE 14, RHODE ISLAND. Distributors Throughout the World.



ABRASIVE ACCURACY BOOSTS PRODUCTION

Abrasive Quality is Reflected in the Finish of Your Product

BREVITY—Identify by IEN - 1915 if you write the maker

At Last We've Found An Industrial Truck Motor That WON'T BURN OUT...EVER!

The Secret is Silicone Insulated Motors Exclusive in Automatic Electric Trucks

No Time Out of Service
No Costly Repair Jobs... Because

• Automatic has the *only* class H motor used in industrial trucks • Has up to 62% greater burn-out protection • Can even operate at 350° fahrenheit

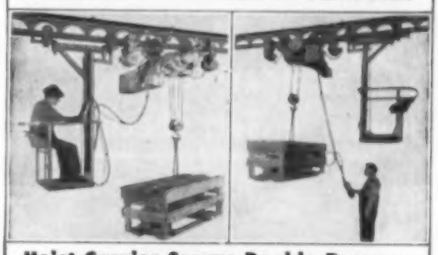
Only cost-cutting Automatic Electric Trucks have exclusive Silicone insulated motors that won't *ever* burn out . . . saving you costly repairs and money-wasting time-out-of-service. *Not one* single armature has been lost due to insulation failure since revolutionary Silicone protection was adopted in 1946. Write for more free information today.

Trade **Automatic** Mark
109 West 87th Street, Dept. B-5, Chicago 20, Illinois

Trade **Automatic** Mark ELECTRIC TRUCKS

BREVITY—Identify by IEN - 1916 if you write the maker

OPERATED FROM FLOOR OR PLATFORM



Hoist Carrier Serves Double Purpose

★ For distant runs the operator rides the platform. For local handling such as unloading trucks, he controls the unit from the floor. Also when the amount of materials to be handled requires two men, one can work on the floor and the other on the platform. ● This is only one of dozens of Cleveland Tramrail time-saving ideas.

GET THIS BOOK! BOOK No. 2008 Packed with valuable information . . .

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
4234 East 355th Street, Wickliffe, Ohio

CLEVELAND TRAMRAIL

BREVITY—Identify by IEN - 1917 if you write the maker

NEW *simple accurate versatile* Odee-HONE

For honing all types of External Cylindrical Surfaces. A single tool for all parts from 1/2" to 2 1/2" in diameter.

GENERATES ACCURATE SIZE, ROUNDNESS, STRAIGHTNESS, AND FINISH ON

Spindles	Pistons and	Test bars
Shafts	piston rods	Die pins
Guide pins	Rollers	and
and bars	Plungers	similar parts

For complete information write or call—

MICROMATIC HONE CORPORATION
8100 Schoolcraft Avenue • Detroit 4, Michigan

BREVITY—Identify by IEN - 1918 If you write the maker

Best Buy

FOR BIG USERS ... the BIG 10-ROLL CAN of GOLD SEAL TAPE

Packed for your convenience . . . 10 rolls of cellophane wrapped Gold Seal Tape in a handy 5 pound container. It's the best buy for regular users. Every roll is doubly protected for factory freshness.

Whatever way you buy tape, you'll find Gold Seal always just right in "tack"; clean handling; non-raveling; non-peeling. Try it. Jenkins Bros. (Rubber Div.), 100 Park Ave., New York 17.

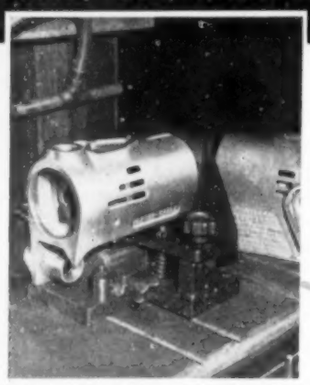
Jenkins Bros. also make Diamond Seal Friction and Rubber Tapes which meet ASTM and Federal Specifications.

JENKINS Gold Seal Tape FRICTION ... RUBBER

MADE BY JENKINS BROS. . . . MAKERS OF FAMOUS JENKINS VALVES

BREVITY—Identify by IEN - 1919 If you write the maker

Saves .97 hrs. per 100 pieces BY PORTER-CABLE Abrasive Belt Machining



THE PROBLEM — To machine a cast aluminum chain case boss with true flatness and to close tolerance, so that exact fit of cover will prevent grease leaks.

PREVIOUS METHOD — Boss was surfaced by a milling machine.

SOLUTION — The job was placed on a Porter-Cable BG-8 wet-belt grinder, using No. 80 grit abrasive. Coolant: soluble oil.

RESULTS — 1.60 hrs. per 100 pieces were required by abrasive belt machining as against 2.57 hrs. required by the previous method. That's saving .97 hrs. per 100 pieces. This saving applied to cutting time alone. Finish obtained by abrasive belt grinding was superior to that obtained by milling.

MODEL BG-8 (with automatic feed table). A precision surfacing machine for repeat operations. Eliminates expensive fixtures. 8" wide belt works on entire areas at once. Quickest method on interrupted areas. Other machines for many different applications.

GET FREE INFORMATION

—on this up-to-the-minute method. Porter-Cable has it, based on research valuable to production men. Our engineers available for job studies. Send in coupon.

Send me a copy of folder, "Abrasive-Belt Finishing"

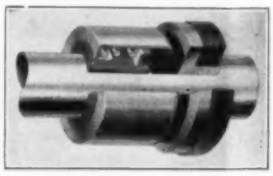
Name .....
Firm Name .....
Address .....
City ..... Zone ..... State .....

PORTER-CABLE MACHINE CO.
6002 N. Salina St., Syracuse 8, N. Y.

BREVITY—Identify by IEN - 1921 If you write the maker

SEALING . . Cartridge ring assembly prevents leakage along rotating shaft

Source: GARLOCK PACKING CO.
50 Garlock St., Palmyra, N. Y.



Package Seal is a new patented design in the company's line of mechanical seals for rotary shafts. It is available for shafts ranging from ⅜ to 2-in. in diameter on equipment such as centrifugal and rotary pumps, speed reducers, compressors, gear boxes. It is suitable for operating pressure to 100-lb. and temperature to 212 deg. F. in sealing against leakage of water, water solutions, oils, solvents. Its flexible element is made of a Buna-N rubber compound for temperatures to 212 deg. F. A silicone rubber element can be supplied for temperature to 450 deg. F.

Construction employs the flexible member or bellows, a spring and washer and a carbon wear ring, all contained in a metal case that rotates with the shaft. These parts are shown assembled to the left in the illustration. To the right is a metal wear insert and a soft rubber vibration ring that assemble in the equipment housing to remain stationary. Sealing action takes place between the carbon wear ring and the metal wear insert, which are lapped together.

Overall length between the left-hand shoulder of the bellows element and the right-hand shoulder of the vibration ring is 1¼ in. on the smallest unit, 1¾ in. on the largest. Length of the rotating element alone is ⅞ to 1⅜ inch. The carbon wear ring is keyed into the metal case for rotation with the case and the diaphragm element so there is no torsional action on the latter. Metals employed in the assembly are subject to specification for special conditions. Normally they are brass and bronze which can be chromium, cadmium or nickel plated. Hardened or stainless steels are available.

BREVITY—Identify by IEN - 1922 If you write the maker

WRENCH . . Electric impact tool drills, reams, taps, drives fastenings

Source: INDEPENDENT PNEUMATIC TOOL CO.
173-77 N. State St., Aurora, Ill.

New size has been added to the company's Packy electric impact wrench previously described IEN-2150-49 to supplement that original ⅜-in. unit. The new tool is fitted with a ⅝-in. square spindle and will drive machine screws to ⅝-in. or No. 22 wood screws. It will set or remove ⅝-in. nuts with its reversible operation.

Operation is at 2,000 rpm., at which speed the wrench delivers 1,850 impact blows per minute in either forward or reverse direction without imposing any measurable twist action on the operator. Weight is about 12 lb. and overall length is about 12 inches. A detachable dead handle is part of the standard assembly.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1923 If you write the maker

The fact that all the horsepower goes through the coupling emphasizes the importance of protecting direct-connected machines against misalignment.

AJAX FLEXIBLE COUPLING CO. INC., WESTFIELD, N. Y.

BREVITY—Identify by IEN - 1924 If you write the maker

We have the answer for stopping damage to wood caused by ROT and TERMITES

At vulnerable points on your next building or remodeling job, use Wolmanized Pressure-Treated Lumber.

Wolmanized Lumber *actually kills rot and termites.* It's clean, odorless, paintable—and service records prove that it lasts 3 to 5 times longer than untreated wood.

The extra cost of using Wolmanized Lumber is *less than the labor cost alone of replacing prematurely failing, untreated wood.* Find out more about this money-saving, longer-lasting treated lumber.

THIS FREE BOOKLET SHOWS YOU WHERE AND WHY TO USE WOLMANIZED LUMBER

Write for your copy today

AMERICAN LUMBER & TREATING CO.
332 S. Michigan Ave. • Chicago 4, Illinois

BREVITY—Identify by IEN - 1925 If you write the maker

PIPE AND BOLT THREADERS

New Line! 4 Models! 4 Choices!

No. 782 PIPE THREADER
Stationary Die-Head
PIPE range ¼" to 2"
BOLT range ¼" to 1½"

No. 782-R PIPE THREADER
Revolving Die-Head
(Manually Operated) and Open-Type Vise Same range as No. 782 model.

No. 781-A BOLT THREADER
Automatic Revolving Die-Head
and Open-Type Vise
BOLT range ¼" to 1½"
PIPE range ¼" to 1¼"

No. 782-A BOLT THREADER
Automatic Revolving Die-Head
and Open-Type Vise
BOLT range ¼" to 1½"
PIPE range ¼" to 2"

The "RAPIDUCTION JR." Line

Basic features of these machines are the same. They differ chiefly in the type of Die-Heads and Work Holders.

Each "RAPIDUCTION JR." model is designed for a PRIMARY purpose. When YOUR exact needs are known, it's EASY to select the BEST machine to fit the job. Write us for complete details.

OSTER THE OSTER MFG. COMPANY
2053 E. 61st St., Cleveland 3, Ohio, U.S.A.

BREVITY—Identify by IEN - 1926 If you write the maker

PRECISION TUBE COMPANY
3824-26-28 TERRACE STREET • PHILADELPHIA 28, PA.

BREVITY—Identify by IEN - 1927 If you write the maker

Don't Say IT CAN'T HAPPEN

Unavoidable operational impacts as well as careless handling quite often subject portable electrical connectors to conditions as bad as the scene pictured above. When this happens many apparently good connectors fail quickly or develop loose contacts and insulation cracks.

Not MINES Portable Plugs and Sockets however . . . they're too sturdy to mind everyday abuse. Molded of Neoprene rubber, as integral units to their cables, they can't crack or shatter, and are highly resistant to the deteriorating effects of grime, fluids, humidity and temperature changes.

Write for DESCRIPTIVE BULLETIN TODAY
It will pay you to investigate the complete MINES Connector line before placing your next electrical connector order.

SEE OUR CATALOG IN SWEET'S FILE

749.1

MINES EQUIPMENT Division
JOY MANUFACTURING COMPANY
HENRY W. OLIVER BLDG., PITTSBURGH 22, PENNA.

BREVITY—Identify by IEN - 1928 If you write the maker

What are your Chemical Injection Requirements?

Are you injecting large or small volumes every twenty-four hours? Is high or low speed required? Are you injecting a light or heavy fluid? Is accurately controlled volume a requisite? These and other factors of chemical injection are solved by the

McFARLAND CHEMICAL INJECTOR

These units will inject as little as ½ pt. per 24 hour period, regardless of fluid viscosity. Every stroke of the plunger injects an equal amount of fluid, assuring an even flow and absence of purging.

The injector has only two moving parts. It operates on air or gas, requiring as little as 5 pounds for efficient, accurate performance. Constructed of brass or bronze throughout.

Available with fluid ends of various materials. Furnished with or without stainless steel tank.

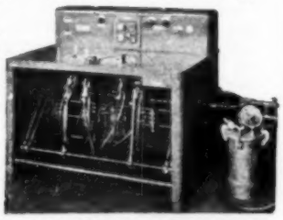
Write for latest bulletin containing complete details, and the answer to your chemical injection problems.

McFARLAND MANUFACTURING CORP.
1430 ROBERTS STREET HOUSTON 3, TEXAS

BREVITY—Identify by IEN - 1929 If you write the maker

A NEW MACHINE for AUTOMATIC SPRAY DECORATING

a variety of small plastic and metal parts AT SPEEDS OF 700 to 3600 PIECES PER HOUR — one color right after another!



Entirely air operated. Eliminates the hazards of electric motors, mercury or solenoid switches and the cost of explosion-proof electrical equipment.
Frequency of mask cleaning greatly reduced. Electro-formed masks are inserted so as to be flush with top of the working table. Spraying is from below.
One hand dial regulates the cycling speed to the maximum of the operator's handling capacity. Using a conveyor belt, operator can use both hands to load. Some load up to 60 pieces per minute, thus doubling their productivity.
Another dial regulates the amount of paint sprayed. Extreme flexibility for those who produce a variety of work on pieces having varying requirements and paint coverage. At any given setting, the same amount of paint is sprayed on every part, regardless of the speed of the loading cycle. Effects paint savings of up to 50 percent over hand spraying.
Size: 42" wide, 35" deep. Table height 30". Employs 8 latest AGA DeVilbiss automatic guns and two 2-gallon air-agitated paint pressure tanks with four insert containers.

SEND COUPON TODAY FOR COMPLETE DETAILS

CONFORMING MATRIX CORPORATION
330 Toledo Factories Bldg. Toledo 2, Ohio

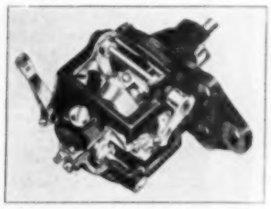
Please send, without obligation, details on ☐ Stationary automatic spray painting masking machines; ☐ Hand masks; ☐ Mechanical masking fixtures; ☐ Air-operated masking fixtures; ☐ Rotary table automatic spray painting masking machines; ☐ Quotation on masks for parts (or prints) which I am forwarding.

NAME _____
FIRM _____
STREET _____
CITY & STATE _____

BREVITY—Identify by IEN - 1930 If you write the maker

CONTROL . . Centrifugal governor for speed control on gasoline engine

Source: HOOF PRODUCTS CO.
6541-45 S. Laramie Ave., Chicago 38, Ill.



New governor mounts by means of a bracket on the side of a gasoline engine normally for V-belt drive from the engine crankshaft, generator, fan or water pump. It connects also to the engine carburetor for its control action. The mechanism is enclosed and sealed against entrance of dirt or escape of lubricant.

It is adjustable for operation under changing conditions, can be equipped so the engine can be controlled manually below the governed speed down to idling. Rotating shafts ride on ball, roller and needle-roller bearings. Thrust surfaces are hardened and ground.

BREVITY—Identify by IEN - 1931 If you write the maker

WELDING . . Arc weld electrode for general production work, 7 sizes

Source: CHAMPION RIVET CO.
East 108 at Harvard, Cleveland 5, Ohio

Good for fast and intermittent work

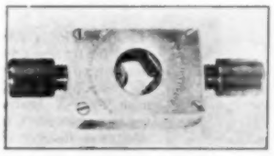
Gray Devil HP. is a new arc-welding electrode available in 3/32 to 5/16-in. diameters for production welding with ac. or dc. equipment. The smallest has current values between 40 and 110 amp. on 16 to 21-volt current. The largest rates 350 to 600 amp. on 24 to 30 volts. Burn-off rate is 10 ipm. at 225 amp., 14 ipm. at 300 amperes. Deposit rate on the two currents is 4 and 5/3 lb. per hour. Spatter loss is about 9 and 12 per cent.

The electrode produces a soft arc that is easy to manipulate. Slag removal presents no problem. Application can be made in vertical, flat and horizontal positions.

BREVITY—Identify by IEN - 1932 If you write the maker

THREADING . . Adjustable hand tool to restore threads on bolt or stud

Source: BUCKINGHAM MFG. CO.
5-9 Travis Ave., Binghamton, N. Y.



Adjustable jaws in this new tool can be fitted by turning knurled heads on the tool body to fit any male thread with ¼ to 1-in. root diameter, right or left hand. The jaws are engaged at the bottom of the threaded section on a bolt or stud and the tool is turned to bring it out to the end of the threaded portion. It removes batters, leaves the threads clean and ready to take a nut. Tool weight is 1¼ pounds. Swing is 2 1/16 inches.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1933 If you write the maker

Made of *ramie*, strongest of all organic fibers . . .

NEW NAVALON

Cuts packing costs to the bone!

Here's a new Johns-Manville Packing called Navalon that can take punishment and *last* . . . in reciprocating service against fresh or salt water, brine, cold oil, and other cold liquids.

The high tensile strength and rot-resistance of long-lasting ramie fiber—famous for these qualities for centuries—have been retained in Navalon. A special Johns-Manville process imparts unique lubricating properties which further enhance Navalon's ability to stand up where other packings fail . . . to reduce down time . . . to cut packing costs to the bone.

For further information, see your local packing distributor—or send for folder PK-52A. Address Johns-Manville, Box 290, New York 16, N. Y.

Johns-Manville PACKINGS & GASKETS

BREVITY—Identify by IEN - 1934 If you write the maker

All long-length bushings listed as standard in the Universal Catalog are regular stock items, which means speedier delivery to you.

146A

UNIVERSAL ENGINEERING COMPANY
FRANKENMUTH 6, MICHIGAN

BREVITY—Identify by IEN - 1935 If you write the maker

PROTECTING THE HEART OF THE MOTOR From Burning Out . . .

Photo Courtesy The Emerson Electric Mfg. Co. (½ HP Dual-Voltage, Capacitor-type Jet Pump Motor)

Built-in by the motor manufacturer, the Klixon Protector stands on guard ready to prevent the motor from burning out by cutting "off" the power should it become dangerously overheated. When it cools to safety, it snaps the power "on" again automatically. (When manual reset type is used, the motor is started again by pushing the red button.) Temporary overloads do not cause nuisance tripouts.

Regardless of the type of motor driven products you make, use motors with Klixon Protectors. Remember, all motors *do not* come protected . . . so to be sure that your motors are equipped with Klixon Protectors, have your motor purchase orders read "KLIXON PROTECTED MOTORS." They will keep your motors from burning out, reduce repairs and keep equipment operating. Specify Klixon Protectors on the motors you buy!

SPENCER THERMOSTAT
Division of Metals & Controls Corp.
202 FOREST ST., ATTLEBORO, MASS.

BREVITY—Identify by IEN - 1936 If you write the maker

YES! Cold drawing is in itself certain proof of the quality of a metal. Unless it is perfectly homogeneous, without blisters, laminations or surface defects, it will break down under the drawing operation.

What's more, a Hackney Cold Drawn Shape or Shell is made by specialists in cold drawing. For more than 45 years Pressed Steel Tank Company has been giving customers such exclusive advantages as: decreased overall weight, greater strength, faster production, greater durability, improved appearance and lower costs. If you would like further details on Hackney Shapes and Shells, write us.

Typical example of Hackney Cold drawing—a special tapered shell, 22" dia., at open end, 16" high. Used as part of centrifugal separator.

PRESSED STEEL TANK COMPANY
Manufacturers of Hackney Products
Main Office and Plant: 1449 So. 66th St., Milwaukee 14
1322 Vanderbilt Concourse Bldg., N. Y. 17 • 253 Hanna Bldg., Cleveland 15 • 916 W. Peachtree St., N. W., Room 120, Atlanta 3 • 208 S. LaSalle St., Room 784, Chicago 4 • 577 Roosevelt Bldg., Los Angeles 14

CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

BREVITY—Identify by IEN - 1937 if you write the maker

PURE WATER

DISTILLED WATER?

PROBLEMS SOLVED WITH Barnstead EQUIPMENT

DEMINERALIZED WATER?

In hundreds of manufacturing processes, where complete purity is needed, Barnstead Stills provide the highest-quality, lowest-cost, chemically pure, sterile water from ½ to 1000 gallons per hour. With over 100 different models to choose from, Barnstead can provide the exact still to fit your particular needs. For Barnstead Laboratory and Industrial stills are the proven standard of the scientific and industrial world.

Where modern manufacturing processes require only high-test mineral-free water, Barnstead Demineralizers are the best producers . . . 5c per 1000 gallons with a minimum of supervision and maintenance. Many new industries are turning to Barnstead Demineralized Water for greater production, fewer rejects and better quality control.

WRITE

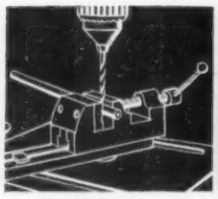
Catalog Z125 gives both sides of the Pure Water Picture. Since Barnstead makes both stills and demineralizers, you'll find this catalog complete, authoritative, unbiased. Write Today!

Barnstead STILL & STERILIZER CO.

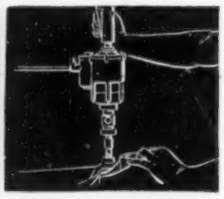
First in Pure Water since 1878

50 Lanesville Terrace, Forest Hills, Boston 31, Mass.

BREVITY—Identify by IEN - 1938 if you write the maker



FOR DRILLING



FOR PRECISION HIGH-SPEED TAPPING

DRILLING is only one of many jobs you can do with a WALKER-TURNER DRILL PRESS

In Walker-Turner machines you get not only great versatility, but higher operating efficiency and longer life.

FOR REMOVING RUST AND SCALE

FOR ABRASIVE POLISHING

WALKER-TURNER DIVISION
KEARNEY AND TRECKER CORPORATION
PLAINFIELD, N. J.

SOLD ONLY THROUGH AUTHORIZED DEALERS

DRILL PRESSES • JOINTERS • TABLE SAWS • BAND SAWS • BELT and DISC SURFACERS • JIG SAWS • RADIAL SAWS • LATHES • TILTING ARBOR SAWS

WALKER-TURNER DIVISION
Kearney & Trecker Corp., Dept. IE2, Plainfield, N. J.
Please send me a copy of the complete Walker-Turner Catalog.

Name .....
Firm .....
Address .....
City ..... Zone ..... State .....

BREVITY—Identify by IEN - 1940 if you write the maker

CLAMP . . C-type design with shielded screw for use by welders

Source: ADJUSTABLE CLAMP CO.
415-19 N. Ashland Ave., Dept. IN, Chicago 22, Ill.

Steel shield, cylindrical in shape, covers and protects the screw against contact with arc-weld sparks in this new No. 120-S Jorgensen clamp. The shield does not carry any part of the clamping load. It does protect against damage from mechanical sources.

Eight sizes in the line provide maximum screw opening from 1¾ in. on the smallest to 11⅝ in. on the largest. Throat depth is 2 to 4¼ in. average, 2⅜ to 5 in. at the center of the frame. Weight is 2 to 11 pounds. Normal load limit is 2,400 to 4,500 pounds. List price is $3 to $10.

BREVITY—Identify by IEN - 1941 if you write the maker

CERAMICS . . Engineering test service selects porcelain enamel for given use

Source: ERIE ENAMELING CO.
1402 W. 20th St., Erie, Pa.

Company invites your inquiry

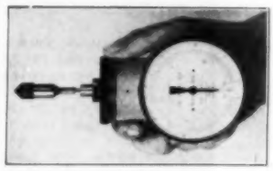
New service has been set up by the company to employ its porcelain enameling experience and to apply its installed equipment to test application of various enamels on given work pieces to accomplish desired results. Following test the company will recommend best materials and procedure.

Typical products on which the company has done this work include pipe, fittings, valves for use in synthetic rubber manufacture, exhaust mufflers, pickling and heat treating equipment parts, conveyor buckets, idler rollers, chutes for materials handling, pump parts. Characteristics in the enamels combine resistance to corrosive action and abrasion, low coefficient of friction, ability to withstand high temperature and thermal shock.

BREVITY—Identify by IEN - 1942 if you write the maker

TACHOMETER . . Centrifugal design protected on overspeed, accelerating

Source: JAMES G. BIDDLE CO.
1314-18 Arch St., Philadelphia 7, Pa.

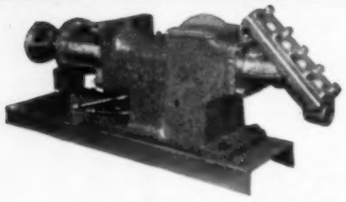


Limited slip is provided for by new friction clutch design in the company's Type-D and Type-A centrifugal tachometers to minimize danger of damage to the mechanism on attempt to use a low range on high speed drive and on too rapid start from standing position. The instrument is available in one, three and five ranges of speed measurement in an overall range of 25 to 48,000 rpm.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1943 if you write the maker

MILTON Roy PUMPS



New! "aiROYmetric"

CONTROLLED VOLUME CHEMICAL PUMPS

These are positive displacement, precision metering units, with the exclusive Milton Roy double-ball check liquid ends, powered by simple air cylinders. Plunger stroke length (capacity) is adjustable while operating by means of screw and hand-wheel. Capacities from 0.4 to 405 GPH. Pressures to 20,000 psi. Plunger diameters from $\frac{1}{16}$" to 3½". For controlled volume pumping . . . practically all chemicals, slurries, solids in suspension, etc. Sanitary liquid ends are available. Ideal units for automatic feed systems. Write for Bulletin 450.

MILTON Roy COMPANY
1302 E. MERMAID AVE., CHESTNUT HILL, PHILA. 18, PA.

BREVITY—Identify by IEN - 1944 if you write the maker

STANDARD ONLY with THRIFTMASTER FULL BALL BEARING

Completely Adjustable Universal Joint Drillheads

Here's a premium feature that comes in the regular package when you buy Thriftmaster Universal Joint Drillheads. Full Ball Bearing Construction coupled with Thriftmaster design and manufacturing dependability, assures smooth, steady, positive drillhead performance that will last!

THRIFTMASTER UNIVERSAL JOINT DRILLHEADS

2 to 10 (or more) Spindles . . . Capacity to ⅞" in Cast Iron 6" to 10" (or larger) Circle

OTHER THRIFTMASTER PRODUCTS

Special Fixed Center and Standard Eccentric Adjustable Drillheads . . . Multiple Spindle Automatic Reverse Tap or Drill Attachments.

Subsidiary of THOMSON INDUSTRIES, INC.

THRIFTMASTER PRODUCTS CORPORATION
1040 N. Plum St., Lancaster, Pa.
also Makers of . . .
DORMAN AUTOMATIC REVERSE TAPPERS
4 Sizes • Friction & Positive Drives • Capacity 1/4-36 to 2" in Steel

BREVITY—Identify by IEN - 1945 if you write the maker

FLAME-CUTTING . . . EASIER, FASTER

CUT-O-MATIC

NCG's PORTABLE Motor-Driven Cutting Machine

So portable you can carry Cut-O-Matic to the work to cut plate or sub-assemblies. Weighs only 50 pounds.

So efficient that grinding or machining are rarely necessary. Cuts are sharp, clean and smooth.

So versatile you can cut light plate or heavy slabs—straight lines, bevels, circles, and shapes. And accessories are available that further extend its uses—including a two-torch mounting for strip, flange and double bevel cutting.

There are so many worthwhile Cut-O-Matic features that you'll want to write immediately for the free illustrated booklet describing this unit in detail. A demonstration right in your own shop can be arranged by your nearest NCG office or authorized NCG dealer.

CUT-O-MATIC STANDARD UNIT
$210
Plus freight

Write for Illustrated Booklet N-134

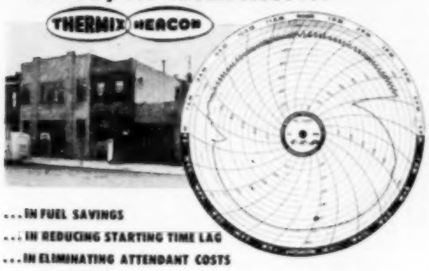
NATIONAL CYLINDER GAS COMPANY
Pioneers in Electric Welding since 1920
844 North Michigan Avenue • Chicago 11, Illinois
"Cut-O-Matic" and "NCG" are trademarks

NCG®
EVERYTHING FOR WELDING

Copr. 1951 National Cylinder Gas Co.

BREVITY—Identify by IEN - 1947 if you write the maker

Small HEACON DAMPER Applications that Pay for Themselves...



...IN FUEL SAVINGS
...IN REDUCING STARTING TIME LAG
...IN ELIMINATING ATTENDANT COSTS

A 200 H. P. Keeler Boiler supplies power for this modern laundry. A Heacon Type L H Damper, located in the duct connecting the outlet of the boiler to a P-D Fan Stack, was installed to maintain pressure during banking periods.

Prior to installation, the boiler was banked at 5:30 P.M., fired to 125 psig at 1:00 A.M. and at 6:30 A.M. available pressure for starting would average 30 psig. Since installation of the Heacon Damper, the oil burners are shut down at 4:45 P.M. and the damper closed. At 6 A.M. when the stop valve is opened, the boiler pressure is 109 psig. This sequence is illustrated by the pressure chart. Approximately 300 gals. of oil are said to be saved each week. In addition, the cost of a watchman to fire the boiler at 1:00 A.M. is saved and an automatic fire alarm system has reduced insurance rates.

Your critical damper problems, large or small, can be solved by Heacon Dampers, at a cost that will pay for itself in six months. Our engineers will be glad to show you how.

THE THERMIX CORPORATION
GREENWICH CONN.
Canadian Affiliates: T. C. CHOWN, LTD.
1440 St. Catherine St. W., Montreal 25, Que. • 50 Abell St., Toronto 3, Ont., Can.

BREVITY—Identify by IEN - 1948 if you write the maker

LIGHT for labor-saving... STRONG for safety!

One man can carry the largest size!

Single ladder with 1¼" x 1" half-round rungs. Nine sizes. 4' to 20'.

Step ladder weighs much less than wood ladder. Five sizes — 3' to 10'.

Figure your savings in man hours...and reduced accident hazards. Magnesium ladders weigh less than wood. This means easy handling. Designed for *lasting* service.

Single ladders are available in nine sizes—4' to 20'... Extension ladders in sizes from 16' to 40'. Both types are made with semi-channeled side rails, and equipped with rubber grip safety ladder feet.

Extension ladder with automatic spring type locks.

See how others save time and money with magnesium ladders; write for Bulletin L-70.

Ladders and Scaffolds for Any Purpose - Any Place - Any Time

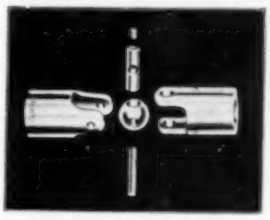
Gold Medal Ladder & Scaffolding
for Greater Safety...Efficiency...Economy
THE PATENT SCAFFOLDING CO., Inc.

38-21 12th Street, Dept. IEN, Long Island City 1, New York
See Your Classified Telephone Directory for Nearest Office

BREVITY—Identify by IEN - 1950 if you write the maker

DRIVE . . Universal joint, four sizes for ¼ to ⅝ in. shafts

Source: CURTIS UNIVERSAL JOINT CO.
2-6 Birnie Ave., Springfield 7, Mass.



Light-Duty ball-design joint has been added to the company's lines of universal shaft joints. The new unit is made in four sizes with shank diameter at ½ to 1¼ in., length overall from 2 to 3¾ in. for shafts from ¼ to ⅝ in. in diameter. Static torque rating under a breaking load is 170 to 2,500 lbs.

The forks are made of alloy steel, ground and heat treated. The pins are hardened and centerless ground. An oiler assures correct lubrication. Assembly is maintained securely by the company's patented Telltale lock ring in an arrangement that permits quick disassembly. List price with bored hubs is $2.20 to $4.80. Illustrated data on the company's lines of joints with test curves, specifications, prices is contained in new 4-page Form C-1.

BREVITY—Identify by IEN - 1951 if you write the maker

GRINDING . . Metal faced platen to back abrasive belts used on glass

Source: MINNESOTA MINING & MFG. CO.
902 Fauquier St., St. Paul 6, Minn.

Replaces platens faced with leather

List price is $9.50 for a new metal-faced rubber-cushioned platen that mounts back of the abrasive belt on a vertical machine designed to grind the edges of glass of both plain and laminated construction. The construction employs ¼ in. of sponge rubber bonded to front one of two steel 12-gage faces.

The metal presents a sufficiently solid backing so the grinding calls only for light pressure with its inherent advantages. The rubber provides a cushioning action to eliminate shock to the belt or the work. The rubber backed face is held to the back face by brass spring tensioned countersunk bolts at the four corners. The back face is mounted rigidly in the grinding machine.

BREVITY—Identify by IEN - 1952 if you write the maker

WRENCH . . Open end adjustable, three sizes, ¾, ⅞ and 1 5/16 in.

Source: OWATONNA TOOL CO.
371 N. Cedar St., Owatonna, Minn.

Lengths are 6, 8 and 10 in. in three new thin-section alloy-steel open-end adjustable wrenches. The jaws are tapered for quick access into close places. They will grip a square or hexagon nut. Each wrench is chromium plated.

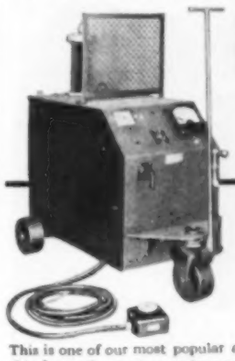
All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1953 if you write the maker

Blows continuous shrill whistle when air line pressure drops below pre-selected value. Automatically stops blowing when pressure is restored. Completely mechanical; entirely self contained; requires no auxiliaries. Fig. 130, Industrial Model, illustrated, is only 4½" high over-all. Price $12.75. Fig. 140, Heavy Duty Model, of heavier construction and louder alarm, 7" high over-all. Price $20.85.
Distributorships Open

AIRLARM P. O. BOX 13034 HOUSTON 19, TEX.

BREVITY—Identify by IEN - 1954 if you write the maker



Portable Tester

50,000 VOLTS 5 KVA

This is one of our most popular a-c testing equipments—suitable for testing motors up to approximately 200 hp and transformers up to about 2500 kva.

Operates on 60-cycle, 115/230-volt supply. Provides smooth, stepless test voltages over the entire range from practically zero to 50 kv. Has accurate, double-scale voltmeter and is equipped with an air circuit breaker with overload trip. Safety features—including foot switch, grounding lead, screen, and signal lamp—protect operators.

All wheels are equipped with roller bearings. Projected floor space is 41" x 26"—over-all height is 44".

For information on G-E's complete line of portable a-c high-potential test sets, write for Bulletin GEC-612, *Apparatus Dept., General Electric Company, Schenectady 5, N. Y.*

GENERAL ELECTRIC

BREVITY—Identify by IEN - 1955 if you write the maker

Costly shop errors are prevented HERE!

Cooper-Bessemer Corp., Mt. Vernon, Ohio, must send intermediates of required home office drawings to its branch factory in Grove City, Pa.

But they realize that poor intermediates—like poor original drawings—often produce illegible blueprints. And these can lead to costly errors in the shop.

Therefore, they don't take chances. They reproduce their drawings on Kodagraph Autopositive Paper... get positive photographic intermediates *directly*—as follows: (1) Exposure in a standard print-making machine; (2) development in standard photographic solutions. A *much* faster operation than is possible with any other type of photographic intermediate material.

LOW-COST INSURANCE AGAINST COSTLY SHOP ERRORS

The Grove City plant receives sparkling intermediates—every detail sharp and clear... with dense photographic black lines on a clean, white, evenly translucent base. Using these Autopositives as print-making masters, highly legible shop prints are produced... *at uniform, practical machine speeds.*

Other advantages which Cooper-Bessemer appreciates: Autopositives are photo-lasting... hold their detail through hundreds of printings. And they will not fade, become brittle, or otherwise deteriorate in the files.

Small wonder, then, that Cooper-Bessemer is sold on Autopositive—is extending its use at the home plant to protect 50,000 valuable original tracings against print-making wear and tear.

Learn all the ways this revolutionary new paper can help you.

Write for a free copy of the new illustrated booklet, "Modern Drawing and Document Reproduction."

Eastman Kodak Company
Industrial Photographic Division
Rochester 4, N. Y.

Kodak TRADE MARK

BREVITY—Identify by IEN - 1957 If you write the maker

OZITE all-hair felt has an outstanding record for solving problems of cushioning, padding, thermal and sound insulation. Our research and engineering staff are ready to give you competent assistance should you have any problems in these or similar applications.

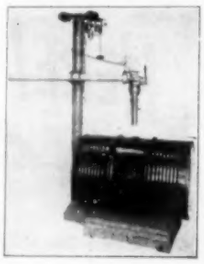
OZITE felt in standard weights and thicknesses meets most production requirements. Special weights and thicknesses; as well as paper, cloth, or foil backings and stitched reinforcements may be had in production quantities.

Write today for OZITE bulletin No. 1500. If you desire samples for test, simply send a brief description of your application.

AMERICAN HAIR & FELT CO.
Dept. X-12, Merchandise Mart Chicago 54, Illinois

BREVITY—Identify by IEN - 1958 If you write the maker

AUTOMATIC DRUM FILLER



Fills containers from 5 gallons up.

Operates from a lighting socket.

Handles any liquid.

Accuracy unaffected by air, vapor, sediment.

Fills to predetermined net weight.

Available in standard or explosion proof models.

Needs no temperature adjustment

A real time saver with heavy liquids

Ask for four page catalog "Automatic Drum Filling Valves"

THE VOL-U-METER COMPANY
BUFFALO 16, N. Y.

BREVITY—Identify by IEN - 1959 If you write the maker

Speed handling with *Chore Boy!*

- Picks up and delivers materials, tools, supplies
- Shuttles bulky, unwieldy loads between departments
- Runs "rush" errands anywhere
- Carry-all for maintenance dept.

Low in price . . . 1000 to 2000 lb. capacity. . .speeds to 15 MPH. 12.8 to 20 sq. ft. carrying deck.

BUDA Diversified Handling Equipment

Clip... Mail Today

The Buda Company, Harvey, Ill.

☐ Rush information on Chore Boy Platform Trucks
Also send facts on ☐ Buda Fork Trucks ☐ "Shop Mule" Tractors

Name _____ Title _____
Company _____
Address _____
City _____ Zone _____ State _____

BI-4H

BREVITY—Identify by IEN - 1960 If you write the maker

WHEELS . . Self-sprung axle unit for industrial mobile equipment

Source: AMERICAN STEEL FOUNDRIES
408-12 N. Michigan Ave., Chicago 11, Ill.

ASF-Linco Level Load designates new forged-steel axle with offset wheel spindles, bearing brackets and with two torsion springs that ride between the brackets and sockets integral with the axle. The brackets are drilled for bolt assembly beneath a unit of mobile equipment. Application can be made singly or in pairs. The axle takes conventional wheels, hubs, roller bearings, brakes.

It cushions the equipment, equalizes action resulting from bumps in a roadway on either side. If both springs break the axle will continue to support the load in mobile assembly. Sizes and load ratings are to specification.

BREVITY—Identify by IEN - 1961 If you write the maker

MARKING . . Die cut characters, range of colors and styles from 2 in. up

Source: BY-BUK CO.
4312-16 W. Pico Blvd., Los Angeles 19, Calif.

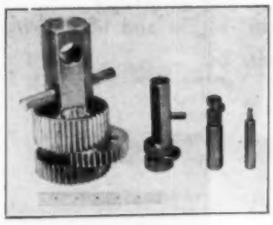
Please note our error

Our description of the company's new die cut characters in IEN-808-51 should have stated that these characters are available in sizes from 2 in. up, not to 2 inches. The characters themselves are made of Scotchlite reflective sheeting and Paint Film sheeting, adhered to reinforcing cardboard, which is stripped from the character faces following application to leave the faces clean and bright.

BREVITY—Identify by IEN - 1962 If you write the maker

WRENCH . . Eccentric wheel design engages the interior of a pipe or tube

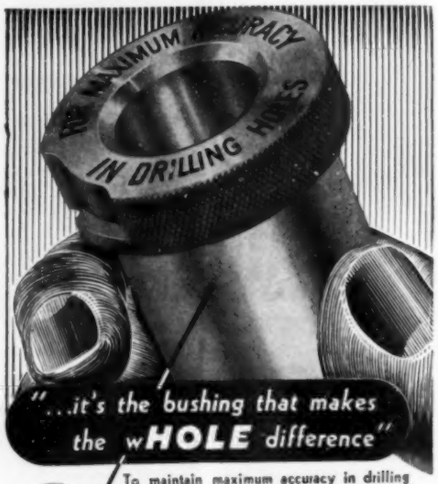
Source: RODDICK TOOL CO.
110-14 Rochester St., Costa Mesa, Calif.



Twelve sizes between ⅛ and 4 in. are now included in the company's line of internal pipe wrenches previously described IEN-7476-49. Operation is based on the action of knurled eccentrics on a hexagon shank to grip inside a pipe when the shank is turned with a standard wrench. Application can be made in standard to double extra-heavy pipe.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

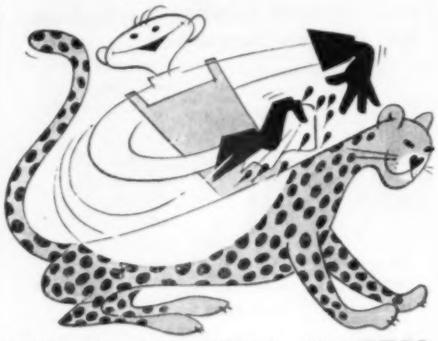
BREVITY—Identify by IEN - 1963 If you write the maker



To maintain maximum accuracy in drilling operations, use the bushing that's precision made for the job...use Acme. Write for catalog.

Acme Industrial Company
Makers of Hardened and Ground Precision Parts
215 N. LAFLIN STREET • CHICAGO 7, ILLINOIS
THE SERVICE SHOP TO INDUSTRY FOR MORE THAN 35 YEARS

BREVITY—Identify by IEN - 1964 If you write the maker



WHISK OFF WELD SPATTER

You speed up welding—and save up to 85% of weld cleaning time and labor—when you apply Protect-O-Metal No. 2 before welding. Just brush or spray it in weld seam and adjacent metal—weld—then whisk off weld spatter in a matter of seconds.

Protect-O-Metal will not cause smoke, fumes, or odors. One coat serves for single or multi-pass welding. Costs 1/10 cent per foot of weld, saves up to three times its cost in time savings alone. Order a trial gallon ($3.25) satisfaction guaranteed or invoice will be cancelled.

PROTECT-O-METAL
POM

G. W. SMITH & SONS, INC. GWSMITH 5404 Kemp Rd., Dayton, O

BREVITY—Identify by IEN - 1965 If you write the maker

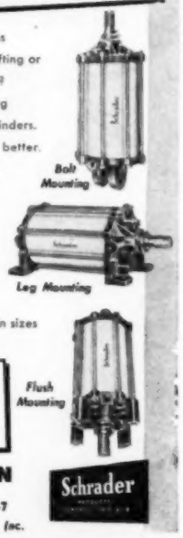
Make Hard Work EASY with these BRAWNY NEW AIR CYLINDERS

What's your problem? Operating press brakes, clutches, doors, clamping work, lifting or lowering, pushing or pulling heavy loads?

Investigate the time-saving, work-saving advantages of the new Schrader Air Cylinders. See how they do hard jobs faster, safer, better.

See what Schrader has done to make this new series of air cylinders tops for ruggedness, for fast cycle operation, and ease of mounting. See how interchangeability of the parts cuts down maintenance.

Schrader Air Cylinders are made in Single Acting and Double Acting types; in sizes from 1" to 8" bore; and in any stroke.



Write for complete information and literature about Schrader Air Cylinders and Air Control Valves. For information about hundreds of other Schrader Air Control Products . . . Press Controls, Air Ejection Sets, Air Line Couplers, Blow Gun etc., ask for 72-Page Catalog.

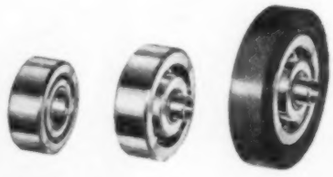
A. SCHRADER'S SON
476 Vanderbilt Ave.
BROOKLYN 17, NEW YORK Dept. IN-7
Division of Scovill Manufacturing Company, Inc.

BREVITY—Identify by IEN - 1966 If you write the maker

A NEWS ADVERTISEMENT BY THE SCHATZ MFG. CO.

LOW-COST BALL BEARING ROLLERS

New Schatz "Commercial" Ball Bearing Rollers Replace Costly Precision Bearings.



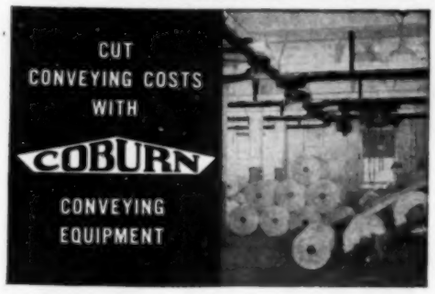
Schatz Type KR, KRS and KRP "Commercial" ball bearing rollers are designed to replace expensive precision ball bearings—when not required by operating conditions—in filing cabinets, locker and stove drawers, cam rollers and similar locations. They provide more efficient operation and are often less expensive than bushings or plain sleeve bearings—since costly machining and assembly time is eliminated.

These Schatz rollers are furnished with either hardened steel or composition treads, and inner and outer rings can be provided with various shaped grooves, threaded studs and other modifications. Machined parts—hardened and tempered—are used throughout.

The complete Schatz "Commercial" line is described in Catalog No. 11. This new 40-page book also gives detailed information on special low-cost ball bearings designed by the Schatz Bearing Engineering Service to suit individual requirements at reduced costs.

For additional information write The Schatz Manufacturing Company, 6750 Fairview Ave., Poughkeepsie, N. Y.

▼ BREVITY—Identify by IEN - 1967 If you write the maker ▼



You can lower costs, speed production and reduce accident hazards with Coburn—the original enclosed overhead monorail. Sectional design permits easy installation, rearrangement or extension, as required. Coburn Enclosed Track does not obstruct floor space, requires very little headroom, simplifies spotting of work directly over machines. Can be used with hand chain or electric hoist. Carries loads up to 3000 lbs. manually or power operated.

Write today for catalog on Enclosed Track, Bracket-type Jib Cranes, Travelling Crane and Monorail installations. Engineering help available without obligation.

COBURN PRODUCTS CF&I

A PRODUCT OF WICKWIRE SPENCER STEEL DIVISION OF THE COLORADO FUEL & IRON CORPORATION
Sales Engineering: 56 Sterling Street, Clinton, Massachusetts
Executive Office: 500 Fifth Avenue, New York 18, New York
Sales Offices: Atlanta • Boston • Buffalo • Chicago • Denver • Detroit • Philadelphia
Pacific Coast—The California Wire Cloth Corporation, Oakland 6, California

▼ BREVITY—Identify by IEN - 1968 If you write the maker ▼

Punching ¼" thick mild steel?

THERE ARE WALES HOLE PUNCHING UNITS TO DO THE JOB

● Only America's most complete line...the Wales Line ...can provide the exact *standard* hole punching unit required for any thickness of metal up to ½" thick.

In most applications, hole punching and notching may be accomplished in the same operation on both stamping presses and press brakes. Wales independent, self-contained units which hold the punches and dies in permanent alignment permit set-ups to be made outside the press and placed on press bed reducing expensive press "downtime" to an absolute minimum. Die sets are not necessary with Wales self-contained Units.

The *multiple* time-saving, money-saving advantages of Wales Hole Punching and Notching Equipment is too BIG a story to tell in this space, so write for fully-illustrated, functionally colored catalogs TODAY.

WALES-STRIPPIT CORPORATION
GEORGE F. WALES, *Chairman*
361 PAYNE AVE., N. TONAWANDA, N. Y.
(Between Buffalo and Niagara Falls)
WALES-STRIPPIT OF CANADA, LTD., HAMILTON, ONTARIO
Specialists in Punching and Notching Equipment

Showing Wales Type "BL" Hole Punching and Type "N" Notching Units in a combination press brake set-up for punching and notching mild steel up to **1/8" THICK.**

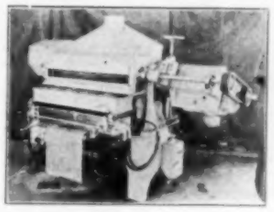
A stamping press set-up of Wales Type "CJ" Hole Punching and Type "NJ" Notching Units for punching and notching mild steel up to **1/4" THICK.**

Showing a set-up of Wales Type "G" Hole Punching Units in a press brake for punching mild steel up to **1/2" THICK.**

▼ BREVITY—Identify by IEN - 1970 If you write the maker ▼

POLISHING . . Abrasive roll machine floats the roll over work on table

Source: CLAIR MFG. CO.
1004 S. Union St., Olean, N. Y.



Model 602 is representative of new design in the company's line of single-spindle special-purpose machines in which a motor-driven abrasive roll is pivoted and backed by air pressure to float over work secured on a table and to maintain uniform pressure on the work independent of changes in surface contour. The machine is adapted to each specified job. It is in successful operation on plier faces, knife-blade backs, flat-iron sole plates, pocket-knife springs, hinges.

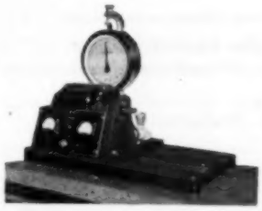
The table-mounted work is secured on a magnetic chuck or by multiple clamping and then the table is moved under the roll and back to the front by hydraulic pressure. At the same time it is oscillated laterally through a short distance to eliminate tracking. Pressure for this purpose is supplied by a base-mounted motor-driven pump. Adjustments are provided on each movement for given requirements.

The abrasive roll is in sizes to 9 in. in diameter by 40 in. in length for a work-table width of 38 inches. Normally a 7½-hp. motor operating at 1,800 rpm. is sufficient to drive the roll. A 2-hp. 1,800-rpm. motor operates the pump. Table stroke front to back can be set at any amount to 24 inches. Guards, hoods, special attachments are available. The complete line contains seven basic designs with which the company is prepared to mechanize most any present hand-finishing operation on products similar to those named.

▼ BREVITY—Identify by IEN - 1971 If you write the maker ▼

TESTING . . Dynamometer has rating to ¾ hp. at 2,000 rpm.

Source: GENERAL ELECTRIC CO.
Dept. 6X-201, Schenectady 5, N. Y.



New dynamometer mounts a 10-in. scale graduated in 0.1-lb. divisions and preloaded to permit torque reading in either direction of rotation. It has a continuous absorption or motoring rating of ¾ hp. at 2,000 rpm. Permissible shaft speed is to 4,000 rpm.

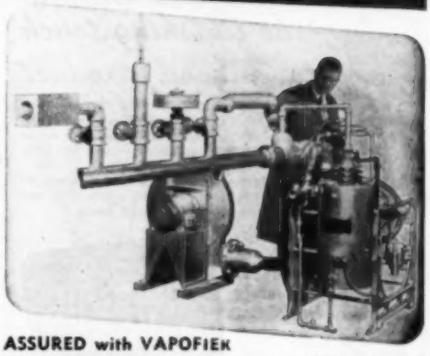
The equipment is designed for test of small motors, generators, internal combustion engines. It applies in establishing performance curves on small motors and generators, to check power requirements on small fans, compressors, pumps, to test engine auxiliaries, to select motors for given drives.

The extended base presents a means to mount the equipment under test. The control panel mounts instruments to read field voltage and armature current. Included is a field-control rheostat and a three-way switch for desired resistance loads. The preloaded scale permits readings as a motor or generator. A tachometer can be specified.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 58

▼ BREVITY—Identify by IEN - 1972 If you write the maker ▼

PRODUCTION INSURANCE against GAS CURTAILMENT



ASSURED with VAPOFIER

Many costly plant shutdowns have been avoided by installing Vapofier as a dependable gas supply. Over 100 varied types of industries use it. Produces clean, sootless, odorless gas by vaporizing (not atomizing) fuel oil. Reliable automatic control, constant fuel-air ratio and uniform manifold pressure. Quick change from utility gas without flame interruption, using same piping and burners. 9 sizes with capacities from 70,000 to 4,000,000 B.T.U's per hour.

Write for complete details on the advantages of firing with Vapofier.

VAPOFIER CORP. • 10326 S. Throop St., Chicago 43, Ill.

▼ BREVITY—Identify by IEN - 1973 If you write the maker ▼

Traffic lanes take a beating. Renew and protect them with Plastic Rock. It packs hard, improving under heavy traffic. Ten-year old floors show no wear. Plastic Rock reduces noise, is fire-resistant, skid-safe, wet or dry; bonds perfectly to concrete, wood or steel. All ingredients packed complete in a handy barrel. Your own crew or contractor can easily apply. Plastic Rock puts shock-absorbers on your floor.

in 48 HOURS!

Ask for Report 220-Q-2.

UNITED LABORATORIES, INC., 16603 Euclid Ave., Cleveland 12, Ohio

PRODUCTS AND PROCESSES for PROTECTING PROPERTY
Field Representatives All Over The World

▼ BREVITY—Identify by IEN - 1974 If you write the maker ▼

This low-cost, portable pump will MOTORIZE your hydraulic equipment

Eliminate costly hand pumping. This electrically-driven pump serves one or more rams. Production zooms — sometimes it triples. Great on presses, pipe benders, etc. Write for catalog. Buy from leading supply houses.

- P-182 Pump (above) combines motor, valves, pump and oil reservoir in one compact unit.
- 10,000 p.s.i. hydraulic pressure. Weight—only 84 lbs.
- Low cost.

Blackhawk Mfg. Co., Dept. P-1521
Milwaukee 1, Wis.

BLACKHAWK

▼ BREVITY—Identify by IEN - 1975 If you write the maker ▼

FREE

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THE MOST COMPLETE LINE OF DROP-FORGED WIRE ROPE AND CHAIN FITTINGS

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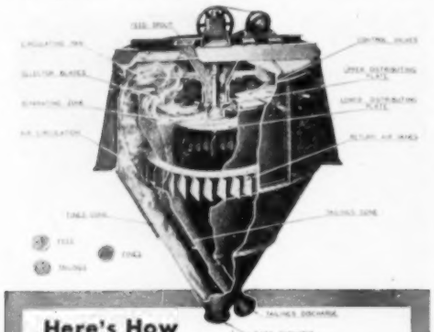
12 Fore Street, Portland 6, Maine
Please send Catalog-Data Book #145 to:
Name ..... Position
Company .....
Street .....
City ..... Zone ..... State

BREVITY—Identify by IEN - 1976 if you write the maker



Here's How STURTEVANT Air Separators Increase Production of Fines ...Lower Production Costs

Sturtevant Air Separators effect production savings by increasing output by 25 to 300% . . . reducing power consumption by as much as 50%.

They efficiently carry off all classified materials in any desired fineness from 40 to 325 mesh and finer . . . eliminate the need of screening in certain applications. Capacities available from ¼ to 50 tons per hr. *Write for full details, today.*

Sturtevant Mill Company
113 Clayton Street, Boston 22, Mass.

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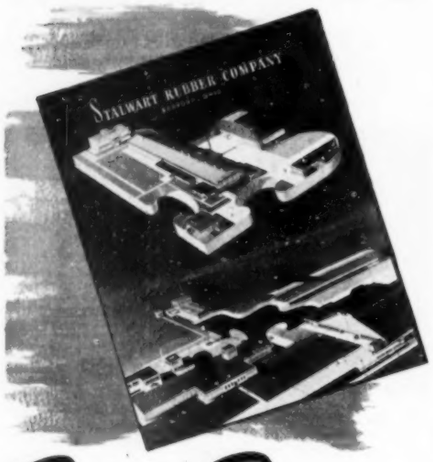

Rubber Parts...

NEW CATALOG CONTAINS DATA ON COMPOUNDS, APPLICATIONS AND FABRICATION METHODS

This 16-page, illustrated, multi-colored catalog now is available to design, production, purchasing and management personnel. This publication has been compiled to familiarize readers with Stalwart-developed rubber compounds which feature resistance to (1) abrasion, (2) chemicals, (3) high and low temperatures, (4) petroleum products and derivatives, and (5) weathering. Sections of the catalog are devoted to the new and outstanding Silicone Rubber compounds, the major methods of fabrication, and Stalwart production facilities.

More than 60 Stalwart-developed compounds are listed by code number. Charted individually in conjunction with these compounds are their physical properties and general characteristics, as well as suggested applications.

Catalog 51SR-1 will be sent upon receipt of coupon or on letterhead request.

STALWART RUBBER COMPANY

THE STALWART RUBBER COMPANY

Please send (without obligation) your new 16-page, illustrated, multi-colored Catalog 51SR-1.

NAME _____ TITLE _____

COMPANY _____

ADDRESS _____

CITY _____ ZONE _____ STATE _____

2152 NORTHFIELD ROAD • BEDFORD, OHIO

BREVITY—Identify by IEN - 1979 if you write the maker

VISE . . Combination assembly for use on bench or on machine table

Source: CHICAGO TOOL & ENGINEERING CO.
8406 S. Chicago Ave., Chicago 17, Ill.

No. 1252 is a new 2½-in. vise with a base shaped to slide and clamp in a dovetail adapter base of swivel design. The base secures to a work bench to take the vise, which can be slid into place and clamped or removed for application on a machine table in clamped-down position. The jaws open to 2½ in., are 1 in. in depth. Removable steel face plates are provided, one with grooves to hold round work. The vise itself is made of cast iron and weighs 10 pounds.

BREVITY—Identify by IEN - 1980 if you write the maker

ALLOY . . Copper, manganese, nickel solid or composite with other metals

Source: GENERAL PLATE DIVISION
41-45 Forest St., Attleboro, Mass.

Made in sheet wire and tube in clad forms

Alloy 715 with 15 per cent each of nickel and manganese and the balance copper and Alloy 720 with 20 per cent of the first two and the balance copper are new age hardening alloys developed by the company. Solid forms include foil from .0005 to .001 in. in thickness, sheet from .001 to .250 in. and bar from .250 to 1 inch. All are available in width to 4 in., or more on quantity order.

Color is silvery white. Typical applications are in manufacture of bellows, clips, diaphragms, pen and pencil barrels, watch cases, springs. Both alloys are suited for services where temperature is under 400 deg. F. or where exposure is limited at higher temperatures.

BREVITY—Identify by IEN - 1981 if you write the maker

CLEANING . . Hand operated auger to remove obstructions from toilets

Source: STOW MFG. CO.
441-45 State St., Binghamton, N. Y.

Sani-Auger is a new hand-operated tool mounting a telescopic tube into which a multi-coil flexible shaft can be drawn. The end of the tube is fitted with a rubber sleeve which is inserted into a clogged toilet bowl. Then the crank is moved forward to project the flexible shaft with its spiral tip until the obstruction is found. Turning the crank engages the obstruction so it can be drawn out.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 1982 if you write the maker

MARSH GAUGES

-the finishing touch to a good product

Through long experience the users of your product have learned to respect the lasting accuracy of Marsh — the greatest name in pressure gauges. A Marsh Gauge on your product is truly a mark of quality.

The Marsh line embraces pressure gauges and dial thermometers of every required type, construction, size, range, finish.

Ask for this catalog covering your instrument requirements

MARSH INSTRUMENT CO.
Sales affiliate of Jas. P. Marsh Corp., Dept. A, Skokie, Ill.
Export Dept., 155 E. 49th St., New York, N. Y.

BREVITY—Identify by IEN - 1983 if you write the maker

New • Fast • Safe ACID PUMP

FOR STEEL CARBOYS

operated by air-line pressure

A steady flow of acid or other liquid is quickly and easily obtained. Safety air valve automatically releases when air pressure is more than required for steady flow.

No. G-5 17 Pneumatic Acid Pump . . $18.80
Air Hose No. 17, 25 feet with connectors $12.86

HAND OR FOOT OPERATED MODELS

Where air pressure is not available or for glass carboys, use manually operated Acid Pumps.
Write for full particulars.

SEND FOR COMPLETE 1950 SAFETY CATALOG
All items shipped direct from Philadelphia.

GENERAL SCIENTIFIC EQUIPMENT CO.
2703 W. Huntingon Street,
Philadelphia 32, Pa.

SAFETY EQUIPMENT FOR EVERY HAZARD

BREVITY—Identify by IEN - 1984 if you write the maker

Newark Wire Cloth COMPANY
342 VERONA AVENUE • NEWARK 4, N. J.

▼ BREVITY—Identify by IEN - 1986 if you write the maker ◁▼

For HIGHEST ELECTRICAL & MECHANICAL Efficiency!

New

JONES 2400 SERIES PLUGS & SOCKETS

Improved Socket Contacts. Four individual flexing surfaces. Positive contact over practically their entire length.

Both Plug and Socket Contacts mounted in recessed pockets greatly increasing leakage distance, INCREASING VOLTAGE RATING.

Plug and Socket Contacts cadmium plated. Add to appearance of your equipment.

Interchangeable with Jones 400 Series.

Ask for Catalog 17. Complete line Jones Plugs, Sockets, Terminal Strips.

P-2406-CCT Plug — with cable clamps in top.

S-2406-SB Socket with shallow bracket for flush mounting.

Send for complete data on this new basic improvement!

Jones HOWARD B. JONES DIVISION

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FREE BOOKLET

ON RUBBER CABLES

for underground and aerial use

Looking for an insulated cable that can be used for primary or secondary distribution, overhead or underground, for direct burial or in ducts?

Looking for a cable that can be run up a pole and, when supported from a messenger, used as an aerial cable . . . to simplify your problems of stocking and inventory to a few sizes of one type of cable?

SEND FOR THIS FREE BOOKLET! It contains 16 pages of facts about Simplex-Anhydrex SA Cables — the cables with the low-water-absorption rubber insulation that makes it unnecessary for you to depend any longer upon cumbersome, heavy lead-sheathed cables.

Described in detail are Simplex-Anhydrex SA Cables for underground use . . . for aerial use . . . for signal and control—plus complete test data. Also included are charts showing power circuits for various-sized single- or multiple-conductor cables.

Included are simple drawings and directions you'll find helpful for splicing single- and multiple-conductor jacketed cable. Also included are directions for single- and multi-conductor "T" splices and for terminating — single- and multi-conductor cable.

For your free copy, just fill in and mail the coupon below:

You get the best of everything electrical Via GraybaR

IN OVER 100 PRINCIPAL CITIES

GRAYBAR ELECTRIC COMPANY, INC. 5076
Graybar Building
420 Lexington Avenue, New York 17, N. Y.

Please send me my free copy of booklet on Simplex—Anhydrex SA Cables.

Name _____ Title _____

Company _____

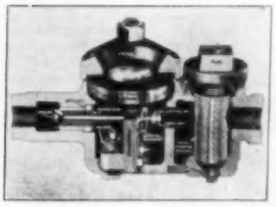
Address _____

City _____ Zone _____ State _____

▼ BREVITY—Identify by IEN - 1989 if you write the maker ◁▼

TRAP . . Thermostatic design rates to 30,000 lb. per hr. at 290 lb.

Source: VELAN ENGINEERING CO.
3 Exchange Place, Jersey City 2, N. J.



The orifice measures ½ in. in diameter and is retained for any pressure to 300 lb. and any capacity to 30,000 lb. per hr. in this new steam trap. The unit is a European design, now in production in the United States in one size to serve in any steam line from ⅛ to 2 inches. The assembly includes a strainer on the inlet side. It measures 8 in. between connection faces by 4½ in. in height. The housing cover includes a sight glass that permits a view of the interior action.

Normal position of the hemisphere orifice disc is open when the valve is cold. The bimetal element deflects to the right in the presence of steam and pulls the disc against the orifice seat. Water replacing the steam causes the element to move again opening the outlet. Pressure on the full disc diameter assists in the opening action. Installation can assume any position for the trap.

▼ BREVITY—Identify by IEN - 1990 if you write the maker ◁▼

LUBRICATING . . Cutting oil additive inhibits rancidity in soluble oils

Source: WEST DISINFECTING CO.
42-18 West St., Long Island City 1, N. Y.

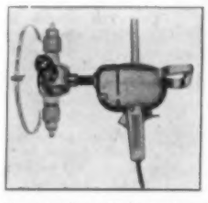
Company will set up trial demonstration

New additive to inhibit rancidity in soluble cutting oils and to prevent obnoxious odors in the oil has been developed by the company. It is added to the cutting oil in the proportion of one gal. of additive to 1,200 gal. of the oil. Spent oil containing the additive can be disposed of in a sewer. Test cases show the possibility of extending the useful life of the cutting oils to periods of several weeks.

▼ BREVITY—Identify by IEN - 1991 if you write the maker ◁▼

DRILLING . . Portable electric tool with angle head rotating attachment

Source: CUMMINS PORTABLE TOOLS
4738-42 Ravenswood Ave., Chicago 40, Ill.



New angle head assembles on the threaded spindle of one of the company's Model 200 ½-in. electric drills. It can be set for either of two speeds of 275 and 1,100 rpm. It is adjustable around a circle as shown in the illustration. Overall length in line with the attachment spindle is 7½ in. to permit entry for drilling between floor joists on 12-in. centers. The head is removable from the drill and the chuck then can be changed from head to drill for normal operation of the tool. Head weight is 2 pounds.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 59

▼ BREVITY—Identify by IEN - 1992 if you write the maker ◁▼

IMPROVE YOUR PRODUCTS AT LOW COST

You can improve your products and equipment, give them corrosion resistance and minimize use of critical materials by designing your products around PERMACLAD. Get complete information today.

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Write for a copy of this information packed folder—D-71.

For Better Products at Low Cost—Specify PERMACLAD

PERMACLAD STAINLESS CLAD STEEL

ALAN WOOD STEEL COMPANY
CONSHOHOCKEN, PA.

125 Years of Iron and Steel Making Experience

Other Products:
A. W. ALGRIP Abrasive Floor Plate • A. W. SUPER-DIAMOND Floor Plate • Plates • Sheets • Strip • (Alloy and Special Grades)

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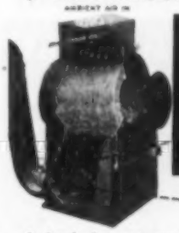


Multi-Purpose Thermostat

Detects Humidity Level Accurately — Instantly

FORCED HOT AIR TUMBLER-TYPE DRYER without Fenwal THERMOSWITCH unit to signal when wash is ready for removal.

A simple, low-cost THERMOSWITCH unit solved problem of variations in wash load, humidity and outside temperature which baffled a cycle timer. Inserted in the moist air outlet duct of forced hot air tumbler-type dryer, it turns on pilot light when temperature of outgoing air, no longer cooled by evaporation in tumbler, rises close to temperature of heated incoming air.

THERMOSWITCH thermostats are unique. Their activating element is the single-metal shell that instantaneously expands or contracts with temperature change, making or breaking the enclosed electrical contacts.

FENWAL INCORPORATED
72 Pleasant Street, Ashland, Mass.
111 S. Burlington Ave., Los Angeles 4, Cal.
TEMPERATURE CONTROL ENGINEERS
Write for Bulletin

Fenwal

THERMOSWITCH®
The Precision, Multi-Purpose, Thermostat Control
SENSITIVE . . . *but only to heat*

▼ BREVITY—Identify by IEN - 1994 if you write the maker ◁▼

ONE OF A LINE

A tiny telephone type—the Guardian Series 695 D.C. Relay has distinguished itself in wartime communications

For inter-plane—intra plane—ground to plane—ship to shore radio—walkie talkie—field telephone equipment—the Guardian Series 695 D.C. is unexcelled. Contrary to conventional design, armature on this relay is formed outward, away from coil, permitting use of a longer coil without increasing overall length of the unit. Armature hinges on a frictionless bearing which requires no lubrication. Proper balance of copper winding and volume of iron on field piece result in maximum flux density without oversaturation of iron. Series 695 D.C. Relay is capable of carrying up to 6 single pole, single throw contact combinations. Can be hermetically sealed as a standard unit in Lug Header type housing or, to specification, in A. N. Connector, Screw Terminal, or Lug Header type housings.

GUARDIAN ELECTRIC
1620-B W. WALNUT STREET CHICAGO 12, ILLINOIS
A COMPLETE LINE OF RELAYS SERVING AMERICAN INDUSTRY

▼ BREVITY—Identify by IEN - 1995 if you write the maker ◁▼

Why UNBRAKO

SPECIFY "STANDARD SIZES"
for Faster, Uninterrupted Production

If you can use *standard sizes* of UNBRAKO Socket Screw Products, we can assure you of *all you want, when you want them!*

Your local UNBRAKO Distributor has full stocks of standard UNBRAKO catalog items on his shelves—ready for immediate delivery.

But "**specials**" are another story. Due to shortages and increased demand, deliveries are uncertain, costs prohibitive. And in many cases we find the "specials" are so close to the borderline that "standards" could easily be adapted.

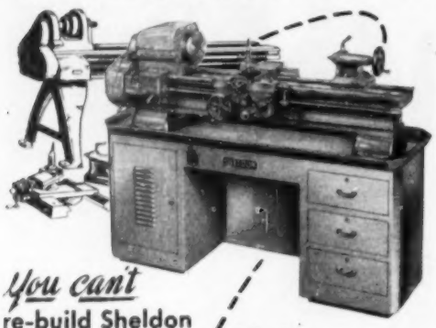
So why not have your requirements re-checked? There may be many places where UNBRAKO "standards" could be used to advantage. If you wish, our "fastener engineers" will be glad to make recommendations. No obligation, of course.

And if you don't have our latest catalog—write for Bulletin 643-R.

Knurling of Socket Screws originated with UNBRAKO in 1934.

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 16, PENNSYLVANIA

BREVITY—Identify by IEN - 1996 if you write the maker



You can't
re-build Sheldon Efficiency into an old lathe . . .

This practice of re-building obsolete machine tools is just poor business. You just can't re-build the accuracy, speed, convenience, and production capacity of a modern, space saving Sheldon Precision Lathe into the cumbersome shell of an old lathe of obsolete design.

First, you would have to build in "Zero Precision" Timken Taper Roller Bearings—there are no other bearings as accurate. You would have to bore a 1½" hole thru the spindle to get Sheldon's capacity; and hold run-out accuracy within 0 to .0005". You would have to re-grind and scrape bed ways within tolerances of .001" per ft., and hold transverse ways and parallel alignment within .005"; and replace your lead screw with one cut on the latest Pratt & Whitney thread milder, etc., thru Sheldon's 18 accuracy tolerances . . . and still you would not have the efficiency of a fast, convenient, space-saving and power-saving Sheldon Precision Lathe, which you can buy today from your tool distributor, fully assembled and ready for work. Don't rebuild, replace for efficiency! Write for Catalog

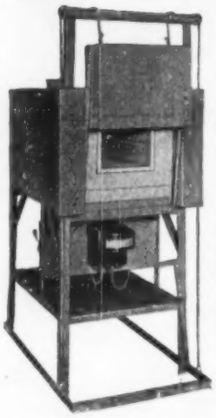
SHELDON
CHICAGO

Sheldon Machine Co. Inc., 4208 N. Knox Ave., Chicago 41, Ill.

BREVITY—Identify by IEN - 1997 if you write the maker

"MULTI-INSULATION" is the secret of . . .

HUPPERT Floor Model FURNACE



The sturdy, production-type Huppert Furnace not only attains highest-level efficiency, but cuts operating costs to a minimum through unique Huppert method of multi-insulation surrounding all sides of the work chamber. This furnace provides a versatile heat range — continuous up to 1850°F., intermittent to 1950°F. Also built for 2300°F. for special applications.

Automatic Temperature Control featured. Also tight-seating, wedge-type door and convenient shelf.

220 V. AC, single or 3-phase operation (110 V. or 440 V. models to order.)

This model built in 20 different sizes.

Model No. 16 illustrated, 12" x 8" x 18" — $925.00 complete

K. H. HUPPERT COMPANY
6856 COTTAGE GROVE AVENUE CHICAGO 37, ILLINOIS
• *Manufacturers of Electric Furnaces and Ovens* •

BREVITY—Identify by IEN - 1998 if you write the maker

THERMOCOUPLE EXTENSION WIRE
. . . of every type for every need

. . . Available through your HSM
HONEYWELL SUPPLIES MAN

Stockrooms for the prompt shipment of Brown thermocouple extension wire are maintained in Philadelphia, Cleveland, Chicago, Atlanta, Houston, Los Angeles and San Francisco. Through your Honeywell Supplies Man, you can benefit by the convenience and availability of such stocks . . . of Base and Noble metals . . . with glass, plastic, asbestos and weatherproof insulations. There's a Honeywell Supplies Man near you . . . at your local Honeywell office . . . no further away than your phone. Call him today, for help with *all* your pyrometer supplies!

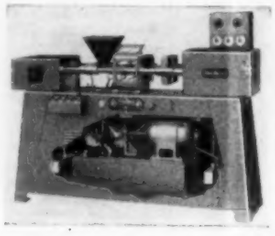
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell
BROWN INSTRUMENTS

BREVITY—Identify by IEN - 1999 if you write the maker

PLASTIC MOLDING . . Injection press rates 2 oz. of thermoplastic material

Source: VAN DORN IRON WORKS CO.
2683-87 E. 79th St., Cleveland 4, Ohio



Timer control has been added to the company's Model-200 injection press, previously described IEN-3445-50. The addition brings the operating capacity up from a previous 180 to 360 cycles per hour. At the same time the manual controls have been simplified for hand setup and for the semi-automatic operation. The machine measures 79 by 26 by 58 inches. It is powered by a 3-hp. motor and Vickers hydraulic equipment with Eagle timers. Plasticizing capacity is 12 lb. per hour.

The platens measure 8 by 8 in. and the mold opens through a 6-in. movement. Mold thickness is minimum at 3 in., maximum at 8½ inches. Space between tie bars is 9 inches. Clamping pressure is 27 ton. The 1-in. injection plunger moves through a 7-in. stroke at 2½ ipm. It applies 10,000 lb. per sq. in. on the plastic material. The supply hopper holds 6 lb. of material. The heating chamber takes 7 ounces.

Three timers in the control housing regulate the interval of closed-mold holding, heater recharging and injection and dwell of the plunger. The operator moves a sliding gate to closed position to start the action through solenoid valves. He opens the gate to remove the finished work and closes it again for the next cycle.

BREVITY—Identify by IEN - 2000 if you write the maker

EXTINGUISHING . . Dry powder units for fires in magnesium, sodium, zinc

Source: ANSUL CHEMICAL CO.
Foot of Stanton, Marinette, Wis.

Met-L-X trade names new dry powder material and also the pressurized extinguisher in which it is employed to extinguish fires in metals such as aluminum powder, magnesium, potassium, sodium, zinc. The powder is expelled by release of inert gas pressure within the extinguisher. It fuses over the burning metal to form an air-excluding crust so combustion cannot continue.

The material is moisture-repellent, free-flowing, non-toxic, non-corrosive and non-abrasive. It will not conduct electricity and will not deteriorate in storage under normal conditions. The extinguishers are available in 30, 150 and 300-lb. sizes. Centralized pipe installations can be supplied to order.

The extinguishers and the material are on Defense Order allocation and thus are available only for plants engaged in military production using the metals named.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2001 if you write the maker

here's your ANSWER to the
colored wire shortage!

E-Z CODE WIRE MARKERS simplify the assembly of wiring circuits by number or standard NEMA color code—answer problems created by a colored wire shortage. They maintain accuracy...minimize rejections...simplify inspection...and get the most from new, inexperienced employees, even when assigned to the most complicated wiring projects. E-Z Codes, with the exclusive Speed-Tab, are faster to remove from carrying card, quicker to apply *(without moistening)* and adhere permanently to wire and cable, even when pulled through conduit. They are unaffected by heat and humidity. E-Z Codes are the efficient, low-cost answer to your colored wire shortage problem.

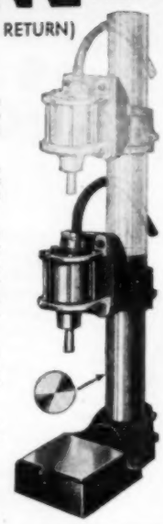
WRITE FOR SAMPLES TODAY!

WESTERN LITHOGRAPH CO.
686 East Second Street
Los Angeles 54, Calif., Dept. IEN-2
740 Lockystone Avenue
St. Louis 22, Mo.
Rocket Distributors, Bayside, L. I., N. Y.

BREVITY—Identify by IEN - 2002 if you write the maker

AIR-MITE AIR ARBOR PRESSES
(AIR OR SPRING RETURN)

Completely Flexible



AIR-MITE now supplies solid steel upright columns in any lengths required to give you these important flexibility features:

1. Normal ram clearance of 0" to 6" may be increased to any clearance required for special application.
2. Supplementary or replacement cylinders with any ram stroke required are available for quick, easy mounting on same brackets.
3. Rapid socket wrench adjustment cylinder bracket swivels for perfect alignment with work.

Presses are available in ¼, ½, ¾ and 1 ton capacities — for staking, rivating, marking, punching and similar operations.

Write for complete catalog of Air-Arbor Presses and single and double acting Air Cylinders.

AIR-MITE
2653-M West Lake, Chicago 12, Ill.

BREVITY—Identify by IEN - 2003 if you write the maker

Don't Walk...

The NEW Executone Intercom saves steps, increases output, cuts costs!

Compute the cost of time wasted by executives and employees running back and forth. *That's how much* the NEW Executone Intercom can save you! Your voice—with lightning speed—gets information, gives instructions. Every working hour becomes more productive for you and your employees. "Inside calls" no longer tie up telephone lines. Office and plant operate at a new peak of efficiency!

Years ahead of its time in operation and design!

Executone's exclusive "CHIME-MATIC"® Signalling announces calls by chime and signal light. Calls may be answered from across the room—yet privacy is assured. New switching circuits for every need make new savings possible. Voices are clearer, distinct, instantly recognizable. Inexpensive 2 station system easily expanded. It will pay you to get the whole story. Just mail the coupon.

Executone
COMMUNICATION & SOUND SYSTEMS

GET THE FACTS

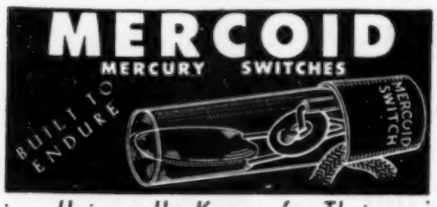
EXECUTONE, INC., Dept. B-5,
415 Lexington Ave., New York 17, N. Y.

Without obligation, please let me have:
☐ The name of your local Distributor.
☐ Complete descriptive literature.

Name.....Title.....
Firm.....
Address.....City.....

BREVITY—Identify by IEN - 2005 If you write the maker

MERCOID
MERCURY SWITCHES



Universally Known for Their Superior Quality and Workmanship

They are not affected by dust, dirt or corrosion and have many definite applications where open contacts are not suitable. Various types available. MERCOID is your guarantee of the best in mercury switches. Further information sent upon request.

LET MERCOID SOLVE YOUR CONTROL PROBLEMS

They rank first for convenience of adjustment—dependable service and long life.

They are designed for various applications requiring the control of pressure, temperature, liquid level and mechanical operation.

Complete Mercoid Catalog sent upon request.

THE MERCOID CORPORATION, 4201 BELMONT AVE., CHICAGO 41, ILL

BREVITY—Identify by IEN - 2006 If you write the maker

"Buffalo" VOLUME FANS
DO *MANY* JOBS WELL!

RUGGED CAST IRON BLOWERS—EXHAUSTERS
Are Reversible and Adjustable

Here are efficient, easily moved fans to handle scores of air jobs in the plant—cleaning, drying, draft, material conveying, exhausting vapors, dust, gases, etc., up to 10" static pressure. Cast iron construction withstands moisture and heat. The fans are quiet running, on dust-proof ball bearings. Top photo shows five of the eight discharge positions. Rotation is readily reversible. WRITE FOR BULLETIN 3615—put this all-around fan to work in your plant!

"Buffalo" FIRST FOR FANS

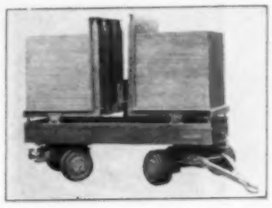
BUFFALO FORGE COMPANY
496 BROADWAY BUFFALO, NEW YORK
Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in All Principal Cities

VENTILATING · INDUCED DRAFT · HEATING
AIR WASHING · FORCED DRAFT · EXHAUSTING
AIR TEMPERING · COOLING · PRESSURE BLOWING

BREVITY—Identify by IEN - 2008 If you write the maker

TRUCK . . Tilting rack trailer to carry 15 ton of oiled steel sheets

Source: PHILLIPS MINE & MILL SUPPLY CO.
2300 Jane St., Pittsburgh 3, Pa.



Mill Buggy designates new tracking tilting-rack trailer on which two load racks are pivoted and supported at the center of the truck on an 8-ton hydraulic jack. The pivot points are a little ahead of center under each rack so it will tilt back with its load when the jack is lowered. This positions the load at a 12½-deg. angle with horizontal for secure riding.

The truck is designed to handle oiled steel sheets. It has a body measuring 90 in. in length on a 62-in. wheelbase. Axles swivel at the center and are connected to move in "tracking" action when in a train back of a tractor. Body width is 36 in. with wheel width about 45 inches. Height to the load is 33 inches. Overall height is 72 inches.

BREVITY—Identify by IEN - 2009 If you write the maker

GAGE . . Electronic thickness unit to check tin plating on ferrous sheets

Source: NORTH AMERICAN PHILIPS CO.
100 E. 42nd St., 4th Floor, New York 17, N. Y.

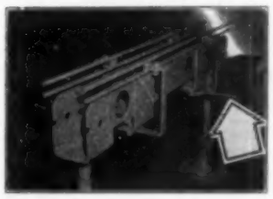
For sheets to 39 inch in width

Thickness of tin plating on a steel sheet can be checked on one side at a time or on both sides non-destructively by application of a new Geiger-Counter tin-plating gage. Thickness from 10 to 120 microinches can be measured within 2 per cent or 1 microinch. The instrument directs X-radiation from a high-intensity tube upon the plated sheet and measures that portion which penetrates and emerges on the opposite side. This measurement is made by a Geiger counter set up to operate an electric printed tape register.

BREVITY—Identify by IEN - 2010 If you write the maker

CONVEYING . . Adjustable guard rail sets quickly to changing work sizes

Source: ISLAND EQUIPMENT CORP.
27-03 Bridge Plaza N., Long Island City 1, N. Y.



New rail design on the company's Styl-O-Matic conveying equipment provides for quick change from one width to another along a straight run of conveyor by moving a single lever at a central point. The design is known as Quick-A-Just. It is available on new equipment and on certain installations now in service in the field.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2011 If you write the maker

CONCRETE DRILLING TIME-COSTS DROP

WITH ROTARY CONCRETE DRILL BITS

DRILL BILLY says: *"Drill thru any masonry with RCD Drill Bits"*

Drilling is Easier. Holes are Cleaner and Straighter

RCD Drill Bits are the answer to the tough problem of drilling concrete, marble, or rock. This original and unsurpassed concrete drill bit has a pulverizing action that makes drilling quick and easy. Used in electric or air rotary drills. No hammering is necessary, no chiseling, no jarring. Standard sizes ¼" to 2" diameter. *Free factory resharpening until further notice.*

Send for new low prices and illustrated literature

ROTARY CONCRETE DRILL COMPANY
650 A. South Arroyo Parkway • Pasadena 1, California

BREVITY—Identify by IEN - 2012 If you write the maker

for easier...cleaner *glue handling* at less cost!
ALEMITE VERSATAL PUMPS

Air-operated Versatal Pumps deliver glues and adhesives directly from bulk storage to your point of application. Saves time and work Ends troublesome handling and transferring of materials.

Hydraulic pressures deliver materials through as much as 1000 feet of hose or pipe, serve up to six spray heads. For FREE book of ideas on how Alemite Versatal Equipment can help solve your material handling problems, write Alemite, Dept. B-21, 1830 Diversey Pkwy., Chicago 14, Ill.

ALEMITE Versatal

Another Product of Stewart-Warner

BREVITY—Identify by IEN - 2013 If you write the maker

S.S.WHITE ELASTOPLASTIC ALEMITE FITTING CAPS

They're FLEXIBLE
- *Easy on*
- *Easy off*
- *Stay put*

These inexpensive plastic caps keep ⅛" Alemite Dot Fittings clean and prevent dirt from being forced into the fittings when the grease gun is applied.

They're ideal for dirty or gritty operations. Made of black vinylite plastic, they're long lasting, retain their flexibility and are unaffected by oil, grease and gasoline.

For full information and prices,

ASK FOR FREE BULLETIN

THE S.S.White PLASTICS DIVISION
DENTAL MFG. CO. Dept. HP 10 East 40th St. NEW YORK 16, N. Y.

BREVITY—Identify by IEN - 2014 If you write the maker

HALLOWELL
Steel Collars

HALLOWELL Solid Steel Collars, functionally proportioned throughout . . . precision-machined so faces run perfectly true . . . are beautifully polished all over . . . yet they cost less than common cast iron collars. 3" bore and smaller are made from Solid Bar Stock. To make sure the collar won't shift on the shaft, they are fitted with the famous UNBRAKO Knurled Point Self-Locking Socket Set Screw—the set screw that won't shake loose when once tightened. HALLOWELL, . . . a "buy word" in shaft collars . . . available in a full range of sizes for

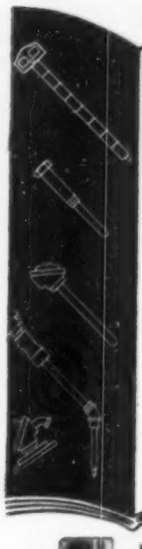
IMMEDIATE DELIVERY

Write for name and address of your nearest HALLOWELL and UNBRAKO Industrial Distributors.

OVER 48 YEARS IN BUSINESS

SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 16, PENNSYLVANIA

BREVITY—Identify by IEN - 2015 if you write the maker



Save Money on Pyrometer Accessories

You save, first, by purchasing thermocouples and pyrometer accessories in large lots, benefiting from quantity discounts.

You save, second, by having adequate reserves always on hand, thus avoiding delivery delays which might be costly.

Investigate Bristol's "Team-Up" Pyrometer Supplies Plan. SEND FOR FREE 56-PAGE BUYERS' GUIDE AND USERS' MANUAL.

Bristol carries stock for immediate shipment in Waterbury, Conn., Chicago and San Francisco. THE BRISTOL COMPANY, 107 Bristol Road, Waterbury 20, Conn. (The Bristol Company of Canada, Ltd., Toronto, Ont.)

BRISTOL

AUTOMATIC CONTROLLING, RECORDING AND TELEMETERING INSTRUMENTS

BREVITY—Identify by IEN - 2016 if you write the maker

The "One Best Way" for Many Materials-Handling Jobs

MORRIS *Centrifugal* SLURRY PUMPS

Coal mines, cement mills, glass works, stone-cutting plants, ore-treating plants, and a large array of chemical plants have found Morris Centrifugal Slurry Pumps to be the "one best" solution to many of their difficult materials-handling problems. Particle size is the only limiting factor, and this can be much larger than you think. Even thick sludges and fluids with viscosities as high as 7,000 SSU flow smoothly through the pump, insuring long and economical life of the wearing parts.

Lower Cost Per Ton or Million Gallons

Power, labor and maintenance costs are outstandingly low when figured on a year-in-year-out basis. The accuracy of the complete Morris assembly, the smooth, vibration-free operation, and the remarkable wearability of parts, all give maximum value for the dollar invested. Ask our engineers about your special problems, or write for Bulletin No. 181.

MORRIS MACHINE WORKS
Baldwinsville, N. Y.
Branch Offices in Principal Cities

MORRIS CENTRIFUGAL PUMPS

BREVITY—Identify by IEN - 2017 if you write the maker

LOOK *at these* **NEW LOW PRICES**

#AS471B-0, 25 amps., SPST, 2¼" x 15/16", $1.20
#AS471B-1, 25 amps., SPST, 2¼" x 15/16", $1.45

#AS482A-0, 45 amps., SPST, 2⅛" x 15/16", $2.50
#AS482A-1, 45 amps., SPST, 2⅛" x 15/16", $2.70

for HONEYWELL *Heavy-duty* MERCURY SWITCHES

Prices are net to manufacturers for quantities of 100 and up. Type numbers ending in "0" are without leads . . . numbers ending in "1" include 7-inch, double cotton covered, extra flexible leads.

Write for complete engineering specifications . . . or for immediate action, call the Honeywell branch office nearest you.

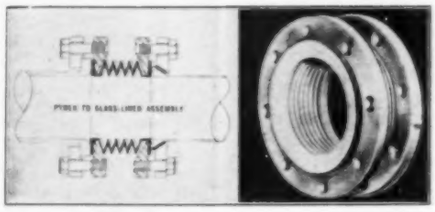
MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 4456 Wayne Ave., Phila. 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell MERCURY SWITCHES

BREVITY—Identify by IEN - 2018 if you write the maker

PIPE FITTING . . Expansion joint made of Teflon is inert to chemicals

Source: UNITED STATES GASKET CO.
P. O. Box 93-A, Camden, N. J.



Pressure to 25 lb. and a temperature range from minus 150 to plus 400 deg. F. is the operating range of this new Teflon expansion joint for use in pipe lines handling chemical fluids. The unit is available for pipe lines from 1 to 12 inches. Face-to-face dimension in relaxed position is 2 to 5 inches. Additional length per section is ¼ to ⅝ inches.

Each assembly is normally supplied with suitable integrally-gasketed flanges drilled to 150-lb. ASME standards. Exact requirements are to specification for each order.

BREVITY—Identify by IEN - 2019 if you write the maker

CRANE . . Single leg gantry to serve Bessemer converters, 125 ton

Source: CLEVELAND CRANE & ENGINEERING CO.
1137 E. 283rd St., Wickliffe, Ohio

Structure sealed against corrosion

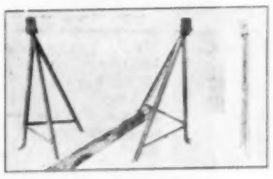
The company has designed, built and installed a new single-leg gantry crane to serve a number of Bessemer converters. It is unusual in the size of its 128½-ft. bridge, its two carriages mounting 45 and 15-ton hooks on one and a 125-ton hook on the other, and in its use of four bridge motors direct connected to pairs of its equalizing-type two-wheel trucks under the gantry leg and the wall support.

The crane provides a 54-ft. lift under its big hook. Overall height of the support leg is a little over 50 feet. The assembly is representative of equipment in any size that the company is prepared to design and manufacture.

BREVITY—Identify by IEN - 2020 if you write the maker

SCAFFOLD . . Three leg support with swivel head to take cross rail

Source: H. C. SWEET CO.
12081-85 Woodbine Ave., Detroit 28, Mich.



Firm support is provided on a level or an uneven surface by pairs of this new three-leg angle-iron support unit and its swivel head. The unit is available in heights from 18 to 60 inches. Disconnecting the horizontal braces near the bottom permits collapsing the legs into a small space for storage or transit.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2021 if you write the maker

Now you can fasten V-belts by using

ALLIGATOR V-BELT FASTENERS

● Alligator V-belt Fasteners and the open-end V-belting now being made by belting manufacturers, will enable you to make up multiple V-belt drives from roll belting. These fasteners have been on the market 9 years and are now being used on a wide variety of drives.

Available for B, C, D sizes of belt for industrial use and 1-in. and 2-in. sizes for railroad use. These fasteners, however, should not be used for repairing endless cord V-belts.

Bulletin V-205 will give you complete details as to where and how these fasteners are used, sizes, list prices, tools and application instructions. A copy will be mailed at your request.

Order from your supply house

FLEXIBLE STEEL LACING COMPANY
4610 Lexington Street, Chicago 44, Illinois

Also sole manufacturers of Alligator Steel Belt Lacing for flat transmission belts and Flexco HD Belt Fasteners and Rip Plates for fastening and repairing conveyor belts.

BREVITY—Identify by IEN - 2022 if you write the maker

HERE'S WHY **VICTOR BLADES** ARE ALWAYS *Uniform*

they're submerged in molten lead for heat treatment

There's never the slightest variation in Victor Blades—they're *always* perfectly uniform—all ways. That's because of Victor's exclusive heat treating process. Bundles of blades, enclosed in special cylinders, are plunged into 2 tons of molten lead. Heat penetration is absolutely uniform—no other method of heat treatment provides as accurate, rigid control of temperature.

Always buy Victor. Remember, blades are always uniform . . . performance is always topnotch . . . dependability is always highest.

Use Steelrite Metal Marking Crayons. Mark cold, hot, damp or grimy metals, yet marks withstand pickling and do not affect enamel application. Ask your dealer for a free copy of Victor's fact-packed booklet, "Metal Cutting" for your tool box—the famous Victor Wall Chart for your shop. They'll make your metal cutting jobs easier.

7150

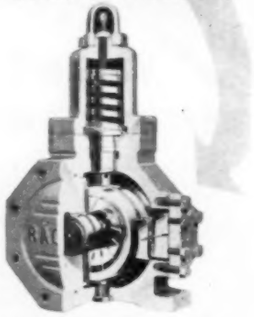
VICTOR SAW WORKS, INC. MIDDLETOWN, N. Y., U. S. A.

Makers of Hand and Power Hack Saw Blades, Frames and Band Saw Blades

BREVITY—Identify by IEN - 2023 if you write the maker

Put ALL of the Oil to Work—

with RACINE *Variable Volume*



OIL HYDRAULIC PUMPS

A visible leak in your hydraulic circuit would be stopped quickly. Bypassed oil is a "leak" in your circuit. A loss to you. RACINE Variable Volume Pumps, with their automatic governors, deliver only the volume of oil needed for the job. There is no excess to be lost through relief valves, to heat the circuit, to waste horsepower. Simplicity, efficiency, a lower first cost are yours when all elements of the circuit are productive — and all the oil is on the job. RACINE Variable Volume Pumps, Valves and other hydraulic units can add much to your hydraulic equipment. Write for catalog P-10-D. It's new and complete.

PUMP AND RESERVOIR UNITS

HYDRAULIC BOOSTER

HYDRAULIC 4-WAY VALVES

Write for the new, 3-color hydraulic catalog P-10-D — for the full story on RACINE Variable Volume Pumps, Valves, Boosters and Package Units. Address Racine Tool & Machine Co., 1761 State Street, Racine, Wisconsin.

RACINE

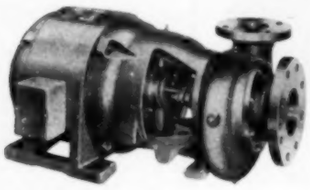
STANDARD FOR QUALITY AND PRECISION

BREVITY—Identify by IEN - 2025 If you write the maker

A NEWS ADVERTISEMENT BY BYRON JACKSON CO.

VERSATILE BILTON PUMP . . interchangeable parts, any-position mounting, and mechanical seal provide unusual versatility

Source: BYRON JACKSON CO., PUMP DIVISION
Box 2017, Terminal Annex, Los Angeles 54



Close-coupled motor and pump are constructed in a single unit on a common shaft. Require very little space. No need for rigid foundation or base. Mount in any position, including wall mounting. Ideal for portable service also. Pump sizes from 1¼" to 5". Capacities to 2000 gpm. Heads to 475 ft.

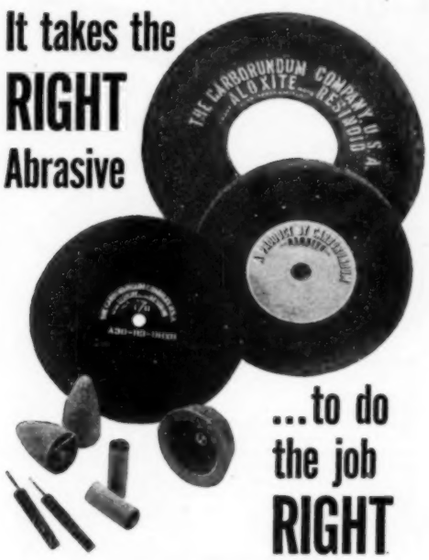
Parts are interchangeable, and a few replacement parts can serve a number of pumps, simplifying inventory. With a small number of extra component parts, one basic Bilton can easily be adapted to a very wide range of capacities.

BJ Mechanical Seal may be added for handling of liquids with special temperature, corrosion or pressure factors. Assures safe, efficient handling without leakage or packing problems.

Specify "BILTON" on all inquiries

BREVITY—Identify by IEN - 2026 If you write the maker

It takes the RIGHT Abrasive



...to do the job RIGHT

Only CARBORUNDUM manufactures a *complete* line of abrasive products from which proper selection can be made. Only when you order products by CARBORUNDUM can you be sure of impartial recommendation of the *right* abrasive for the job, in every case. For most efficient, economical results throughout—standardize on abrasives by CARBORUNDUM.

• • •

Typical of more recent developments by CARBORUNDUM are new bonds setting records for productivity in high-speed grinding operations...efficient cutting in low-speed grinding of high tensile strength metals ...and production economy in grinding gray iron, hard malleables, semi-steel and non-ferrous metals.

Industrial cloth belts, with special thermosetting resin bond, resist frictional heat...permit faster grinding speeds and higher production rates. They cut clean, fast, true and much cooler than ordinary belts.

Only

CARBORUNDUM

TRADE MARK

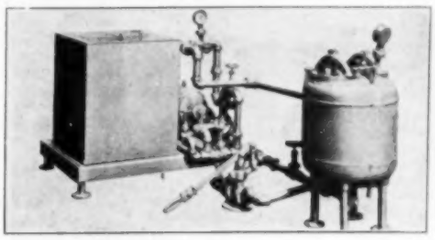
Makes **ALL** *abrasive products ...to give you the proper* **ONE**

"Carborundum" and "Aloxite" are registered trademarks which indicate manufacture by The Carborundum Company, Niagara Falls, New York

BREVITY—Identify by IEN - 2028 If you write the maker

SEALING . . Pressure impregnator and sealing liquid for porous castings

Source: TINCHER PRODUCTS CO.
814 Borden Ave., Sycamore, Ill.



New assembly of the company's pump-operated circulator and heater and a 30-gal. pressure chamber and hand pump is offered by the company to reclaim small castings of various metals that have porous areas. The company also supplies the sealing liquid which is mixed with water prior to application. It is composed of certain metal oxides in a liquid carrying vehicle.

Defective castings are placed in the pressure chamber and the chamber is closed. Liquid is then pumped in from the storage tank on the circulator and is circulated while heat is applied in the tank to bring work and liquid up to about 180 deg. F. At this point the circulation is stopped.

Valves in the line are closed and the hand pump is employed to apply pressure in the chamber to 400 lb. or less. The pressure is held for about 15 minutes. After this interval the chamber is opened, the work is removed and rinsed in cold water to remove the liquid on the surfaces. Full strength in the seal is developed in 24 to 36 hours.

BREVITY—Identify by IEN - 2029 If you write the maker

DRIVE . . Variable speed unit, tandem V-belt design, 16 to 1 ratio

Source: WORTHINGTON PUMP & MACHINERY CORP.
35-39 Appleton St., Holyoke, Mass.

Six power ratings between 1 and 15 hp. with adjustment ratio maximum at 16 to 1 in the smallest unit, 6 to 1 in the largest, constitute the company's recently improved design of its Model-A Allspeed Drive previously described IEN-9263-42. As in the previous design the input and output shafts are in line and terminate in the housing with support in factory-lubricated and sealed ball bearings. Output speed is varied by operating a handwheel or specified remote control to change pitch between input and output sides.

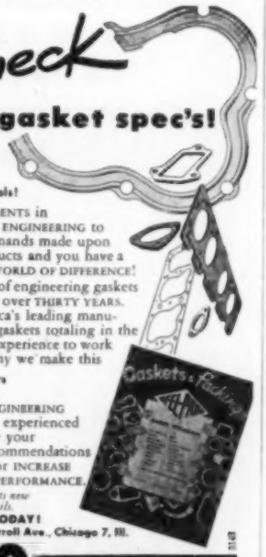
The housing cover can be opened for access to the sheaves and the terminated shafts inside the assembly permit changing the belts without disconnecting the drive. Overall housing dimensions are about 8 by 7 by 13 inches. At 1,725-rpm. input the 1-hp. unit provides an output range between 215 and 3,450 rpm. At the same input speed the 15-hp. assembly ranges from 370 to 2,220 rpm. Any of the units can be supplied for vertical or horizontal assembly to operate in either direction as the installation requires.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2030 If you write the maker

. . . it's *TIME* to *Re-check* your gasket spec's!

Find out whether YOU are making use of the cost-cutting, product-improving development in Sealing Materials!



Take the LATEST ADVANCEMENTS in sealing materials, add FEL-PRO ENGINEERING to adapt them to the specific demands made upon the gaskets used in your products and you have a combination that can MAKE A WORLD OF DIFFERENCE!

We've been at this specialty of engineering gaskets to customers' specific needs for over THIRTY YEARS. We're serving many of America's leading manufacturers for years . . . making gaskets totaling in the billions. We'd like to put this experience to work on your problems . . . that's why we make this

Special offer to manufacturers of products requiring gaskets.
Send a request for FEL-PRO ENGINEERING GASKET recommendations. An experienced representative will call, review your problems, and return with recommendations THAT WILL SAVE YOU MONEY OR INCREASE PROFITS THROUGH IMPROVED PERFORMANCE.

If you prefer, mail us a sample of gaskets now employed together with application details.

There is NO OBLIGATION. Write TODAY!
FELT PRODUCTS MFG. CO., 1523 Carroll Ave., Chicago 7, Ill.

FEL-PRO ENGINEERED gaskets

Utilize Newest Materials

Specifically designed for your product

BREVITY—Identify by IEN - 2031 If you write the maker

BREVITY—Identify by IEN - 2032 If you write the maker

SPRING STEEL

Roebling Cold Rolled brings fewer machine stoppages . . . fewer rejects

YOU SAVE MONEY with Roebling Cold Rolled Spring Steel. Its physical and dimensional uniformity cuts costs; gives a better product, better production. And Roebling Cold Rolled is made as you want it—annealed, hard rolled untempered; scaleless tempered; tempered and polished, strawed or blued.

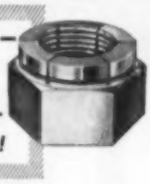
Large quantities of Roebling specialty wires—flat, round and shaped—are now required in the rearmament program. We will always, however, do everything possible to meet your requirements. John A. Roebling's Sons Company, Trenton 2, N. J.

ROEBLING

BREVITY—Identify by IEN - 2033 If you write the maker

A fastener AIN'T, *if—it works loose.*

The "FLEXLOC" IS—*because it won't!*



FLEXLOC

ONE-PIECE, ALL-METAL STOP- and LOCK-NUT

Its "chuck-like," resilient locking segments lock the "FLEXLOC" securely in any position on a threaded member with a controlled, uniform and dependable torque.

Tough applications demonstrate that the "FLEXLOC" positively "won't work loose", yet it can be removed easily with a wrench when desired. Because it is all-metal, temperatures as high as 550°F. hold no terrors for the "FLEXLOC."

The "FLEXLOC" has plenty of tensile . . . can be re-used many times . . . has therefore a long, effective life.

Write for further information and free samples.

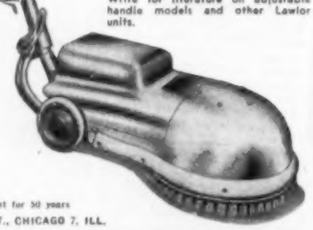
SPS STANDARD PRESSED STEEL CO.
JENKINTOWN 14, PENNSYLVANIA

BREVITY—Identify by IEN - 2034 if you write the maker

The adjustable handle makes it possible to scrub and wax polish in congested places where hand cleaning was necessary before — around and under machines, counters, desks, lockers, etc.

Operator can raise or lower handle to any angle within an 80 degree arc and shove the Lawlor under anything where there is at least a 9½" opening and as far back as 4½ feet. Three models — a size to suit every need.

Write for literature on adjustable handle models and other Lawlor units.



There's a complete line of Lawlor Floor Maintenance Equipment — scrubbers, wax polishers mopping tanks, mop wringers.

S. C. LAWLOR CO.
Quality Floor Equipment for 30 years
126 N. ABERDEEN ST., CHICAGO 7, ILL.

BREVITY—Identify by IEN - 2035 if you write the maker

THE FLORLINE MARKING MACHINE

Makes Safety & Parking Lines At Walking Speed!

Often pays for itself on the first job! 1 man alone can do the floor marking in 1 day that previously took an entire crew.

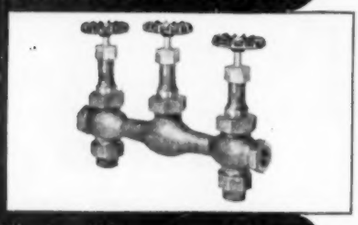
- Makes curved, straight, continuous or skip lines . . . 2, 3, or 4 inches wide with interchangeable carriages.
- Holds 1½ gals. paint, lacquer, whitewash . . . cannot spill.
- No motor, compressor or attachments.
- One man, one hand operation.
- Portable, efficient, speedy.
- Operates on gravity feed.
- Easy to clean and store.

$97.50
F.O.B. Detroit
Fully Guaranteed.

H. C. SWEET CO.
12083 Woodbine Ave. Detroit 28, Michigan

BREVITY—Identify by IEN - 2036 if you write the maker

The Compactness of HONEYWELL BY-PASSES



will simplify your piping

The Honeywell By-Pass is a compact, neat, easily-installed means of by-passing control valves, traps and other pressure units. It simplifies piping arrangements by eliminating a multitude of joints, nipples and elbows . . . by using a minimum of space . . . by saving time . . . by minimizing maintenance.

Available in Bronze as follows: sizes ½ to 2 inches . . . Bronze or Stainless trim . . . union bonnet . . . screwed ends . . . 150-500 lbs. . . . from $21 to $116. Available in Cast Steel as follows: 1 to 2 inches . . . union bonnet for 1" and 1¼", bolted bonnet for 1½" and 2" . . . Stainless trim . . . screwed or flanged ends . . . 500-600 lbs. . . . from $228 to $426. Send in your order, today!

MINNEAPOLIS-HONEYWELL REGULATOR CO., *Industrial Division*, 1911 Windrim Ave., Philadelphia 44, Pa. Offices in more than 80 principal cities of the United States, Canada and throughout the world.

Honeywell VALVE PRODUCTS

BREVITY—Identify by IEN - 2037 if you write the maker

CALCULATING . . Circular slide rule for problems involving radioactivity

Source: NUCLEAR INSTRUMENT & CHEMICAL CORP. 225-231 W. Erie St., Chicago 10, Ill.

List price is $5 for this new circular slide-rule calculator. It is made of Vinylite plastic rigid sheet material in an assembly of three discs mounted on a central eyelet. The inner disc is opaque and extends a little beyond the rims of the other two. The outer discs are of transparent material with white painted inner surfaces and with windows to expose the scales on the inner disc.

One face gives relationships between the register reading of a scaler, the scale factor, the elapsed time in making a count, the count rate and the probability for statistical errors. The other face gives the relationships between count rate, resolution time, coincidence loss and the activity of a source as a function of the number of half lives or the number of half thicknesses of absorbers.

BREVITY—Identify by IEN - 2038 if you write the maker

EXTINGUISHING . . Wheel mounted unit directs dry chemical to blanket fire

Source: AMERICAN-LAFRANCE-FOAMITE CORP. 903 Erie St., Elmira, N. Y.

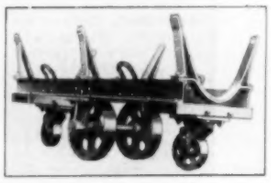
Can be handled by two operators

Alfco 350 is a new wheel-mounted dry-chemical extinguisher containing 350 lb. of dry material that can be discharged on a fire in 75 seconds by release of nitrogen gas which develops discharge pressure to 200 pounds. Density of the discharge protects the operator against the heat of a fire. Discharge range is 20 to 25 feet. The chemical is heavier than air and settles in spite of updrafts.

BREVITY—Identify by IEN - 2039 if you write the maker

TRUCK . . Four wheel hand unit for lengths of pipe, bar stock, shapes

Source: LANSING CO. 603 Race St., Lansing, Mich.



A load is carried primarily on the two center wheels on this new Bar Stock truck. The load rides in three cradles which place its center about 20 in. above the floor. Overall height is 25 inches. Weight is 340 pounds. Length is 60 in. and width is 27 inches. Load capacity is 6,000 lb. with cast-iron wheels, 5,000 lb. with plastic wheels and a little less when the wheels are rubber tired. All are equipped with Hyatt roller bearings.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 80

BREVITY—Identify by IEN - 2040 if you write the maker

More light on the working area with no added line load . . .

LUSTRA REFLECTOR LAMPS

LUSTRA REFLECTOR LAMPS have sealed-in reflector linings of pure silver . . . with filaments at proper focal center to project more light exactly where needed. Costly reflector maintenance is abolished because reflectors can't tarnish, get soiled . . . never need cleaning. And watt for watt of current consumption, Lustra Reflector Lamps deliver more *usable* light.

Lustra Reflector Lamps come in a complete choice of sizes and wattages . . . and with beam patterns ranging from medium concentrated to very wide. For superior lighting and longer lamp life, send for full information and sample lamps. Lustra Corporation, Dept. P-2, 36 Washington Street, Brooklyn 1, New York.

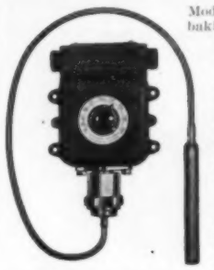
Lustra
AMERICA'S DATED LAMPS

DOUBLE DUTY REFLECTOR LAMPS, INCANDESCENT LAMPS, FLUORESCENT TUBES, SPOTLITES AND FLOODLITES, RUGGED DUTY LAMPS, FLUORESCENT FIXTURES AND STARTERS

BREVITY—Identify by IEN - 2041 if you write the maker

TEMPERATURE CONTROL

Operates in five ranges of 150, 350, 450, 650 & 1000 deg. F.



Model Z—Temperature control for baking ovens, air heaters, plastic molding presses, soft-metal melting pots and similar devices heated by gas, electricity or oil. Calibrated and uncalibrated models for five temperature ranges: 150, 350, 450, 650 and 1,000 deg. F. Equipment includes thermostatic element with 5 ft. of capillary tubing. Longer tubing to specification.

The control unit contains a Micro switch with normally-closed, normally-open or single-pole double throw contacts. On the housing face is a temperature-setting knurled knob and porcelain-enameled dial. Conduit connection is on top of the housing. The cover, front and sides can be removed without disturbing setting or wiring. Overall dimensions are 6 in. in height by 3 in. in depth.

Control circuit capacity is 500 watts ac, 50 watts dc. The thermostatic element is interchangeable, can be replaced on the job, and is furnished for a variety of applications.

List price for two-wire design is $40 to $47 for uncalibrated element ranges, $45 to $52 with calibrated elements. The 3-wire design ranges from $45 to $52 and from $50 to $57.

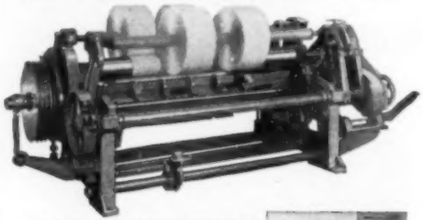
Send for Bulletins 505-I and 505-J

THE PARTLOW CORPORATION
4 Campion Road New Hartford, N. Y.

BREVITY—Identify by IEN - 2042 if you write the maker

Camachine® 28-3D

A fast slitter-rewinder specially designed to produce top-quality rolls of coated or tacky papers and fabrics



Another great Camachine! The 28-3D, featuring air-operated slitters, produces top-quality rolls of uniform density regardless of variations in the caliper of the material. Positive roll separation is assured by the use of two separate rewind shafts. Handles web up to 72" wide at speeds up to 500 f.p.m. Produces rewound rolls as narrow as 1" (or ½" with special slitters), and up to 30" dia. Write for Bulletin 2020.

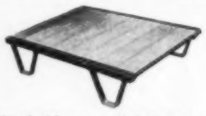
AA-227

CAMERON MACHINE COMPANY
61 POPLAR STREET • BROOKLYN 2, N. Y.

BREVITY—Identify by IEN - 2043 if you write the maker

In production or in storage

IRONBOUND EQUIPMENT HANDLES SMALL PARTS MORE EFFICIENTLY



Standard 2-way entry bolted type skid built to handle loads up to 5 tons.

Standard box top welded to standard skid. Available too, with removable boxes. Handles many items in production and storage.

Flexible arrangement of boxes and skids permits tiering and stacking to meet your individual requirements. Provides quick availability, easy handling, or storage for complete units or parts.

Each of the units illustrated has an important use in modern industry. Ironbound skid platforms and box tops are prime sources of increased plant capacity so vitally needed today. Our representative can help you to increase your output and plant space. Catalog GP-7 may help you, too!

Ironbound

IRONBOUND
BOX & LUMBER COMPANY
Materials Handling Division
50 HOFFMAN PLACE • HILLSIDE, N. J.

MANUFACTURERS OF QUALITY BUILT SKIDS, SEMI-LIVE SKIDS, FLOOR TRUCKS, ROLL TRUCKS, DOLLIES AND PRY BARS

BREVITY—Identify by IEN - 2044 if you write the maker

Peerless Electric

TYPE PVS EXHAUST FANS

These fans are "all Peerless"—completely designed and manufactured by The Peerless Electric Company, manufacturer of fans and motors since 1893. Both motor and fan are designed to work together as a unit. **PERMANENT SPLIT CAPACITOR MOTOR**—No internal switches or mechanical parts to fail and cause breakdowns. Totally enclosed to exclude dirt and moisture. **QUIET OPERATION**—Wide heavy gauge steel blades rotating at slow speed to assure rated capacity at low noise level. **FOUR SIZES**—Fans 16", 18", 24", 30" dia.; motor H. P. ⅛, ¼, ⅓, ½; CFM: 2150, 2900, 4550, 7375; frame sizes: 24", 26", 34", 40" square. **HORIZONTAL OR VERTICAL MOUNTING**—Ball bearing in rear hood to take end thrust in all positions. **FURNISHED COMPLETE**—Controller for single speed, 2-speed, or 3-speed, furnished as ordered. **EASY TO INSTALL**—Requires only 4 or 6 lag screws or bolts to mount. **FINISH**—Gray Hammerloid baked enamel. **RATINGS**—According to National Association of Fan Manufacturers and American Society of Heating & Ventilating Engineers. **GUARANTEED** against defective workmanship or material for a period of one year from date of shipment from factory. Registered serial number identifies immediately for spare parts or duplicates. Write for complete specification sheet.

THE PEERLESS ELECTRIC COMPANY • WARREN, OHIO
Established 1893

Peerless-Electric MOTORS·FANS·BLOWERS

BREVITY—Identify by IEN - 2045 if you write the maker

NOW you can match the RIGHT VISOR to the job!

FOR IMPACT RESISTANCE ← THE CHIPRUF VISOR

FOR CHEMICAL SPLASHES ← THE CHEMPRUF VISOR

Good design in a faceshield means not only protection for the wearer—but *self-protection* for the visor to effect economy in operation!

That's why it's bad business to make one faceshield do the work of two. The safeguard may be reduced; equipment life is *sure* to be.

These new M.S.A. Standard Faceshields with interchangeable, special-purpose visors, combine a full measure of protection plus a full measure of economy. M.S.A.'s "Head-Line" Design Preformed Headgear, available in three popular types, is easily adjusted to any head size, provides friction locks for positioning visor and shield, has a non-chafing padded sweatband, and is comfort-engineered for all-day wear. Snap fasteners make it easy to install the visors . . .

CHIPRUF . . . for sanding, light grinding, wood working, hot metal pouring, glass manufacturing or any similar operation where face protection from flying particles is needed.

CHEMPRUF . . . designed to combat splash or spray hazards from acids, oils, alkalis, hot liquids and similar fluids.

These visors are also available on M.S.A. Super-gard Faceshields, which extend the protection well around the sides of the worker's head.

Bulletin No. CN-4 will give you complete details. If you would like a demonstration in your own shop, just write.

MINE SAFETY APPLIANCES COMPANY
BRADDOCK, THOMAS and MEADE STREETS • PITTSBURGH 8, PA.
At Your Service
54 BRANCH OFFICES IN THE UNITED STATES AND CANADA

CALL THE M.S.A. MAN ON YOUR EVERY SAFETY PROBLEM . . . HIS JOB IS TO HELP YOU.

MSA SAFETY EQUIPMENT HEADQUARTERS

BREVITY—Identify by IEN - 2047 if you write the maker

PHOTOGRAPHING . . Slit type camera records high speed transient phenomena

Source: BECKMAN & WHITLEY INC.
927-31 San Carlos Ave., San Carlos, Calif.

The action of equipment elements moving at high speeds such as the opening and closing of relays, the movement of projectiles, recording of oscillograph traces, making of time-and-position sequence photographs with the aid of a stroboscopic lamp, can all be handled by this new high-speed camera and its associated electronic power-supply and timing equipment. It can be employed also to record non-optical events by feeding electrical impulses and recording them on the film in relation to the printed time sequence. The printer dials accumulate 1,000 seconds per turnover. Longer periods can be handled by adding a number of turnovers.

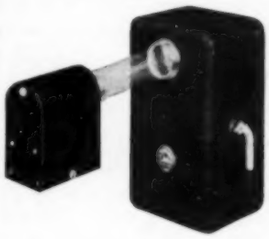
The slit camera records time sequence past or within a vertical plane passing through the optical axis of the lens. At the same time electronically-timed numbers are recorded on the film to read elapsed seconds and hundredths with thousandths showing on intermediate pips. The film speed is continuously variable and can be advanced in either direction at speeds to 2,000 mph.

The equipment includes the 60-lb. camera as illustrated, a 100-lb. power supply and a 60-lb. timer control. The camera measures 13 by 13 by 10 inches. The other two units are each 14 by 21 by 13 inches.

BREVITY—Identify by IEN - 2048 if you write the maker

CONTROL . . Photoelectric equipment prevents pileup on a conveyor line

Source: PHOTOSWITCH INC.
75-79 Broadway, Cambridge 42, Mass.



Set P1D is a new combination of light source, photoelectric cell, amplifier and delayed-action relay to prevent pileup of objects that are being carried along on a conveyor line. Light source and cell, the latter in the housing containing the amplifier and relay, mount on opposite sides of the conveyor and not more than 10 ft. apart so the work it carries will pass between them. The delay is adjusted in its range between 1/5 and 5 sec. so the relay will not operate as long as the work units pass in normal spaced sequence.

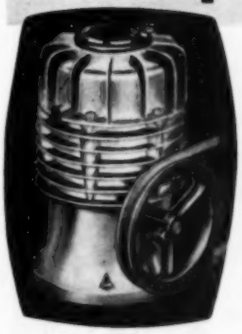
Pileup that brings the units together for longer interruption interval will actuate the relay and open the conveyor's driving-motor circuit. Operation can be specified on 110 or 220-volt 50 or 60-cycle ac. The relay is double-pole, double-throw design with contacts rating 20 amp. on 110-volt ac.

All Makers of These And All Other Products Are Listed In THOMAS' REGISTER . . Descriptions . . Ratings . . See Page 50

BREVITY—Identify by IEN - 2049 if you write the maker

Answers your need for small, low cost

Air Compressors



IF your product calls for a "small packaged" air compressor or vacuum pump, Brown Air Compressor is your answer. Only 9½ inches high, it delivers 2 cu. ft. per minute at 30 to 40 lbs. pressure. Advanced type diaphragms instead of oily pistons assure absolutely clean, oil-free air. Requires no lubrication. Operates in any position. Factory-sealed ball bearings. Write for full data.

Also Twin Model with double capacity.

W. R. BROWN CORPORATION
5730 ARMITAGE AVE., CHICAGO 39, ILL.

AIR VISES • AIR REGULATORS • AIR FILTERS • PAINT SPRAYERS

BREVITY—Identify by IEN - 2050 if you write the maker

PRODUCTION - TODAY'S FIRST NEED! but Production with Accuracy!

GET BOTH with Motch & Merryweather

Triple-Chip METHOD

SLITTING and SLOTTING SAW BLADES

Every wanted advantage in modern slitting and slotting, PLUS M. & M.'s exclusive dual drive. Only Motch & Merryweather slitting and slotting blades bring you 4 great features: (1) Triple-Chip efficiency; (2) dual drive adaptation; (3) blade interchangeability (fewer blades required); (4) special sizes.

Stock sizes carried by your local dealer.

THE MOTCH & MERRYWEATHER MACHINERY CO.
PENTON BUILDING • CLEVELAND 13, OHIO

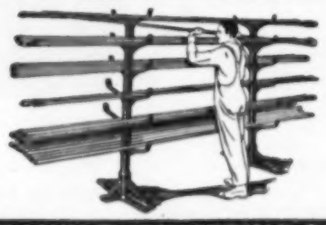
AT YOUR COMMAND • AN UNPARALLELED EXPERIENCE IN CIRCULAR SAWING

BREVITY—Identify by IEN - 2051 if you write the maker

SPEEDS UP STOCK-ROOM SERVICE

The BROWN TIME-SAVING RACK saves the time previously lost end-hauling each bar of stock its entire length from the old-style, closed-side Rack, the Brown Rack requiring but a few inches of side movement. Each length, width and thickness of stock is displayed in goldfish visibility for instant selection. Workmen waiting for stock are served without waste of time, and returned to their production machines to turn out a maximum of output. Any time you require additional storage space, all you need do is to add more units. If you want to relocate it at any time, you can do so for it is unattached to the building. It is a simple, durable article made of metal in five styles. It can't burn, warp, sag or twist; depreciation is practically nil. SEND FOR BULLETIN No. 26-E DESCRIBING

BROWN'S *QUICK-SERVE* RACKS



BROWN ENGINEERING CO.
122 NORTH THIRD STREET READING, PENNA.

BREVITY—Identify by IEN - 2052 if you write the maker

Metso Silicate Cleaners produce vigorous alkaline power, balanced with soluble silica. Speeds cleaning, prevents dirt re-deposition, protects metals

in and out of **METSO** *bath . . . in a minute*

. . . With surface chemically clean for plating or other finishing. That's the score in many metal plants using Metso cleaners.

Dirt removal rates with Metso cleaners are fast; for instance, removal of paraffin soil from Dow metal with Metso took only 0.5 minute; red oxide buffing compound, 1.5 minutes.

Send for sample and further information for your cleaning operation.

Philadelphia Quartz Company
1131 Public Ledger Bldg., Phila. 6, Pa.

METSO *cleaners*

BREVITY—Identify by IEN - 2053 if you write the maker

SHENANGO-PENN Centrifugal CASTINGS ... KEY TO SAVINGS

Shenango-Penn centrifugal casting process gives this 220-groove Fourdrinier warp roll desirable uniformity, plus extra strength to avoid distortion due to roll weight and force of wire tension in service.

NEED ROLLS?

Weigh these money-saving facts!

1. Shenango-Penn's centrifugal casting process, a natural for rolls, assures greater strength and uniformity, finer, pressure-dense grain, and freedom from hidden defects. Result: prolonged wear-life, ability to withstand abnormal loads, less maintenance, less replacement!

2. Shenango-Penn offers complete, modern machining facilities, plus years of specialized roll-making experience, to meet your specifications with over-all precision. You save time and avoid trouble!

For bulletins, for data on rolls or roll assemblies of *any* size or type, ferrous or non-ferrous, write . . .

SHENANGO-PENN MOLD COMPANY
785 West Third Street, Dover, Ohio
Executive Offices: Pittsburgh, Pa.

SHENANGO PENN

All Bronzes • Monel Metal • Hi-Resist • Mechanite Metal

BREVITY—Identify by IEN - 2054 if you write the maker

PRENTISS

"BULL Dog"

MACHINISTS' VISES

Backed by 80 years of time-proven acceptance by industry.

•

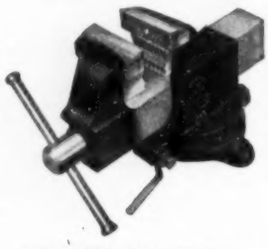
Hundreds of plants have used them and still do.

•

Insist on PRENTISS for that "EXTRA" vise service.

•

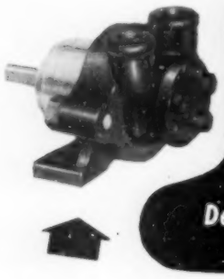
Your industrial Distributor can furnish.



Buy PRENTISS Today

PRENTISS VISE DIVISION
OF THE CHARLES PARKER CO. MERIDEN, CONN.

BREVITY—Identify by IEN - 2055 if you write the maker



Let TUTHILL PUMPS Help Solve Your Design Problems

• For Pressure Lubrication
• For Hydraulic Controls
• For Liquid Transfer

Wherever you need a compact pumping unit for present equipment or for projected design, it will pay you to get the facts on Tuthill small pumps for non-corrosive service. Model L, illustrated here, is a positive displacement internal gear rotary pump, noted for its mechanically-sealed, leak-free performance, quiet operation, low power consumption and long life. Capacities upto 5 g.p.m. and pressures to 400 p.s.i. Ring or foot mounting. Many porting arrangements. Write for Model L Bulletin.

TUTHILL PUMP COMPANY
939 East 95th Street, Chicago 19, Illinois

FEBRUARY 1951 INDEX TO ALL PRODUCTS

How to find what you need:

Leaf through the issue with your current needs in mind, noting down those subjects that sound like solutions to your problems as you read the subject headings.

Next use this index to pick up page number references to additional sources on the subjects you have chosen. An asterisk (*) in the index after a number means editorial material.

Now take one subject at a time and refer to the pages you have noted. This time read the editorial descriptions and advertisements in detail. Then write the IEN numbers on which you want further information on your Reader Service Form to send to us, or write the manufacturer direct.

If you have trouble in finding the answer to your current problem through the subjects in this issue, let us know. We can name sources of supply with the help of our sixteen-year index of all products that have appeared in IEN. Any question we cannot answer will be published in our "I Wish I Had" column to invite suggestions.

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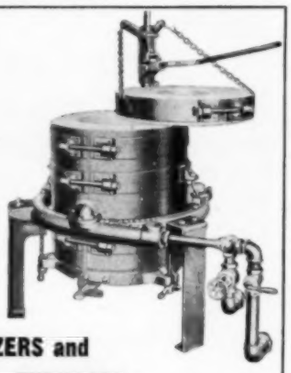

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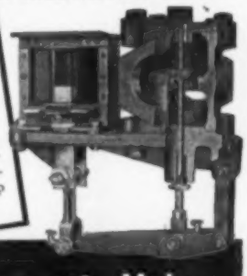

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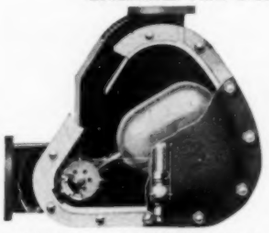

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It is published to invite your suggestions and comments, which are forwarded immediately to the originator, just as we will be happy to publish similar problems for you.

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